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Table of Contents

Executive Summary	1
Introduction	5
Status and Importance of Big Game Resources	7
Current Habitat Management Efforts	13
Inventory and Monitoring	13
Big Game Habitat Assessment	13
Habitat Enhancement Programs	15
Research	15
Partnerships	15
Management Opportunities and Recommended Implementation Strategies	19
Inventory	19
Activity Planning	20
Habitat Improvement and Project Maintenance	21
Monitoring	23
Habitat Protection	23
Research	24
Outreach	25
Coordination/Partnerships	26
Future Demands	29
Program Implementation and Cost Summary	31
Appendices	33
A.Habitat Assessment Summaries for Each Big Game Species	33
B.Listing of Key Habitat Areas by State	49

List of Tables

Table 1.	Acreage of Big Game Habitat on BLM Public Lands by State	8
Table 2.	Overall Population Trend and Estimate of Big Game on BLM Public Lands	9
Table 3.	Estimated Number of Deer, Elk, and Other Big Game Hunting Days and Net Value of Hunting Trips on BLM Public Lands, 1985	10
Table 4.	Estimated Number of Visitor Days and Net Value of Primary Nonconsumptive Trips to BLM Public Lands, 1988	11
Table 5.	Acreage and Inventory Funding Needs Through the Year 2000 in Key Habitat Areas by State	19
Table 6.	Activity Plan Development and Associated Cost Through the Year 2000 for Key Habitat Areas by State	20
Table 7.	Types of Habitat Improvement Projects Needed in Key Habitat Areas	22
Table 8.	Fiscal Resources Required for Development of Projects Through the Year 2000 and Annual Maintenance Cost in Key Habitat Areas by State	22
Table 9.	Acreage and Annual Funding Needs for Monitoring Activities in Key Habitat Areas by State	23
Table 10.	Estimated Funding Needs Through the Year 2000 for Research and Habitat Protection in Key Habitat Areas by State	25
Table 11.	Summary of Significant Factors Affecting Future Management of Big Game Habitat and Number of BLM Field Offices Identifying Factors	29
Table 12.	Summary of Projected Fiscal Resource Funding Needs of Each Big Game Species and Major Program Component Through the Year 2000	32

List of Figures

Figure 1.	Major Program Components and Funding Needs	3
Figure 2.	Summary of Total Funding Needs by Major Program Components	31

Executive Summary

The *Big Game Habitat Management Strategic Plan* is an initiative specific to the Bureau of Land Management (BLM). This plan is one of several national strategic plans developed to implement the Bureau's *Fish and Wildlife 2000—A Plan for the Future*.

Addressed in this strategy plan are 19 big game species inhabiting over 120 million acres of public lands in 13 contiguous Western States and an additional 70 million acres in Alaska. Annually, these public lands provide over 5.4 million big game hunting recreational days and over 2.3 million nonconsumptive recreational days for Americans who enjoy big game. In economic significance, big game hunting contributes an estimated \$152.8 million in annual revenues, while nonconsumptive activities provide an additional \$63.9 million directly into local and State economies.

Habitat conditions and big game populations on BLM public lands are generally improving for Rocky Mountain elk, moose, bison, caribou, musk ox, and

mountain goat. Habitat conditions are declining for black-tailed and mule deer, and Roosevelt and tule elk populations are declining in portions of their range. Habitat conditions for pronghorn, black bear, javelina, white-tailed deer, grizzly bear, and exotic species such as Barbary sheep, Iranian ibex, and wild pig are generally stable.

One of the overall goals of *Fish and Wildlife 2000—A Plan for the Future* is to provide big game habitat of sufficient quantity and quality to sustain identifiable economic and/or social contributions to the American people. To achieve this overall goal, eight specific goals have been identified herein and management strategies recommended. These are summarized below. The strategies focus on big game habitat management areas, or Key Habitat Areas, which were identified for future activity planning and management efforts. They will be integrated into other BLM programs and Bureauwide initiatives to assist in the implementation of this strategy plan.



1. Inventory big game habitats to assess conditions, trends, and potential, and identify management opportunities and needs.

Recommended Strategies

- Inventory priority Key Habitat Areas and determine ecological site potential and big game carrying capacities.
 - Cooperate with State Wildlife Agencies (SWAs) to establish a standardized data base for sharing information.
2. Restore, maintain, and improve big game habitat conditions on BLM public lands by incorporating SWA objectives and implementing activity plans and other integrated resource management plans.

Recommended Strategies

- Prepare integrated activity plans to meet desired plant community objectives for big game habitat in Key Habitat Areas.
 - Coordinate activity plans with SWAs' big game strategic plans.
 - Develop an interagency cooperative management program for a featured habitat area to be used as a showcase for implementing recommended strategies from this plan.
3. Ensure that fiscal resources are invested where the greatest benefits can be derived to maintain and enhance big game habitats.

Recommended Strategies

- Focus habitat improvements in priority Key Habitat Areas and secure funds for maintenance during life of project.
- Develop partnerships for assistance and contributions for implementing habitat improvements through the Challenge Cost Share Program.
- Evaluate effectiveness of habitat improvements in meeting biological and social objectives.

4. Develop and implement a standardized and quantifiable monitoring system to track management progress.

Recommended Strategies

- Prioritize Key Habitat Areas for monitoring and coordinate with other resource monitoring efforts and SWAs.
 - Design vegetation studies to differentiate ungulate utilization levels and document population numbers and period of use.
5. Improve management capabilities and opportunities to provide public access to wildlife resources through securing inholding and other land parcels.

Recommended Strategies

- Consolidate land surface jurisdiction for management of crucial big game habitat areas.
 - Review withdrawals and exchanges to ensure consistency with RMP objectives and actively negotiate to secure lands beneficial to big game habitat management.
 - Develop mitigation and stipulations to avoid or minimize impacts to big game habitat.
6. Fund and support research that results in knowledge that can be applied to ecosystem management of big game habitat.

Recommended Strategies

- Initiate cooperative research and coordinate research needs with SWAs to improve techniques in management of big game habitat on an ecosystem basis.
- Correlate big game habitat relationships to Ecological Site Inventory data.
- Evaluate reclamation, mitigation, and habitat improvement projects for effectiveness.

7. Enhance public understanding of managing big game habitat in relation to other resource programs.

Recommended Strategies

- Encourage BLM participation in professional meetings, organizations, and workshops.
 - Meet regularly with conservation partners.
 - Develop and disseminate biological diversity interpretive materials characterizing the ecology of big game.
 - Promote big game viewing and support population management principles.
8. Generate public awareness of and support for partnerships to accomplish big game habitat management goals and objectives.

Recommended Strategies

- Establish partnership agreements and Memorandums of Understanding.
- Continue and support expansion of Challenge Cost Share Program.

- Coordinate resource activity plan objectives with SWA strategic species plans.
- Cooperate with affected interest groups to resolve conflict issues on BLM public lands.
- Establish a Big Game Program Coordinator in the Western States.

Total funding estimate for implementation of Key Habitat Areas (622) by the year 2000 is \$75.1 million (Figure 1).

Figure 1. Major program components and funding needs.

Monitoring	\$21.9 million
Habitat Improvements	\$18.9 million
Habitat Maintenance	\$11.3 million
Activity Planning	\$10.4 million
Inventory	\$6.3 million
Habitat Protection	\$3.3 million
Research	\$3.0 million
Total	\$75.1 million

Introduction

This *Big Game Habitat Management Strategy Plan* is one of several national strategies (see inside cover) providing guidance for BLM land use program planning, budgeting, and management. National strategy plans address specific habitat management opportunities and needs in achieving the national fish and wildlife goals and objectives contained in *Fish and Wildlife 2000—A Plan for the Future*. The *Fish and Wildlife 2000* plan was published in 1987 as a broad planning document outlining program goals and objectives for managing fish, wildlife, and special status plants into the 21st century.

This strategic plan was developed by a team of professional wildlife biologists and managers from BLM, State Wildlife Agencies (SWAs), and the Rocky Mountain Elk Foundation. The team included:

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The objectives of this strategy plan as outlined by the planning team are to (1) identify strategies for accomplishing national big game habitat management goals and objectives; (2) emphasize expanding partnerships to generate support, awareness, and assistance to accomplish big game management goals; (3) identify potential habitat conflicts resulting from other land uses; (4) provide an overview of seasonal big game habitats and habitat conditions; (5) ensure that limited funding resources are invested for the

greatest benefits; and (6) provide for implementation of programs to monitor big game habitats using standardized techniques.

A questionnaire was used to collect information on big game habitat resource management opportunities and funding needs from 143 BLM field offices. Information from the questionnaires was coordinated with SWAs and demonstrates the best available information based on current estimates and professional judgement.

Natural plant communities as habitats for big game animals are important for managing biodiversity. Big game management will be integrated into the Bureau's ecosystem management policy to maintain and restore biological diversity on BLM public lands. Biological diversity is defined as the variety of life and processes that link plants, animals, soils, air, and water into ecological systems (The Wildlife Society, Position Statement on the Role of Wildlife Management in Conserving Biodiversity). Recognized levels or components of biological diversity on a hierarchical scale are: (1) regional diversity—the mosaic of ecosystems across landscapes; (2) ecosystem diversity—the assemblage of plant and animal communities within an area and their interrelationships and processes; (3) species diversity—the variety of plant and animal species; and (4) genetic diversity—the natural variation within individual species that evolves in response

to environmental changes and forces. The relationships of these biological diversity components must be managed at a geographical scale to sustain long-term productivity of all ecological processes while meeting multiple resource use objectives.

Implementing big game habitat goals and recommended strategies, as proposed in this plan, will facilitate the management of ecosystems and components of biological diversity on BLM public lands. Inventory and planning will be implemented on a regional or ecosystem level to recognize important plant communities for maintaining natural habitat linkages and corridors. Big game species occupy broad landscapes and require diverse plant communities in fulfilling yearlong habitat requirements. At the ecosystem level, plant communities will be restored, maintained, and improved to meet desired plant community objectives for providing viable big game population and abundance levels to meet social, economical, and ecological demands by the public.

Addressing biological diversity on a regional or ecosystem scale will require the cooperation of all State and Federal agencies, other landowners, and the public. Ecosystem management for big game (wildlife) resources is more complicated than management of other renewable resources due to the mobile nature and fluctuation in numbers of big game through time under normal climatic conditions.



Status and Importance of Big Game Resources

The big game species addressed in this strategy plan are taxonomically a diverse group including both large ungulates and predators. A total of 19 species are included: three species each of deer (white-tailed, black-tailed, and mule deer) and elk (Roosevelt, Rocky Mountain, and Tule), two species of moose (Alaska and Shiras are combined for purposes of this plan), caribou, mountain goat, pronghorn, bison, musk ox, javelina, bear (black and grizzly), and three exotic species—Barbary sheep, Iranian ibex, and wild pig, which are not native to North America, but have flourished on BLM public lands in some areas following release. The native wild sheep, Rocky Mountain, California, desert bighorn, and Dall's, were omitted from this plan because they are to be included in a separate BLM strategy plan. Mountain lions and wolves are also excluded from this plan.

BLM administers approximately 269 million acres of public lands, including desert, semidesert grasslands, shrublands, forests, mountains, and tundra. Of these, approximately 203 million acres provide big game habitat (*Public Land Statistics*, 1991). The estimated habitat acreage for individual big game species on BLM public lands, by state, is shown in Table 1.

Deer and pronghorn are the most prominent big game species in the contiguous United States. The 90 million acres of BLM public lands in Alaska support the majority of black bear, grizzly bear, mountain goat, and moose habitat managed by BLM, as well as all of the caribou and musk ox habitat. Big game populations on many of these lands are increasing (Table 2). With responsibility for 203 million acres of big game habitat, BLM manages more wildlife habitat than any other Federal agency.

Management consideration is given to balance the multiple uses (and multiple users) of the big game resources on BLM-administered public lands. One of the uses as decreed by treaty or law is the right of Native

Americans to use certain natural resources for religious ceremonies and/or to maintain a traditional lifestyle. These rights may include the harvesting of big game animals. These harvest rights affect big game management by SWAs in Alaska, Arizona, Colorado, Idaho, and Utah. In Utah, treaties or agreements with Native American tribes allow harvests of big game animals in certain portions of the state. In Colorado and Idaho, treaties allow members of specific tribes to hunt big

game without State hunting licenses or reporting requirements (tribal restrictions often apply) in "usual and customary hunting areas" including BLM-administered public lands.

Subsistence hunting in Alaska is not restricted to Native American peoples.

The right to subsistence hunting is restricted to Alaska residents who meet certain legal requirements as established under the Alaska National Interest Lands Conservation Act (ANILCA). This law is intended to allow subsistence uses on the public lands by rural residents, consistent with sound management principles and conservation of fish and wildlife populations. Subsistence hunting is defined in ANILCA as the customary and traditional uses by Alaska residents of wild, renewable resources. The act allows for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; the making and selling of handicraft articles out of inedible byproducts of these fish and wildlife resources; the bartering or sharing with family and other tribal members; and trading. Implementation of Alaska's Federal Subsistence Program requires BLM to participate with other agencies in the management of wildlife (including big game animals) for subsistence harvesting on public lands, and establishes a dual system for management of wildlife by Federal and State agencies. Wildlife management in Alaska is unique. Federal agencies in Alaska must ensure that subsistence uses by rural residents are guaranteed over other uses of wildlife on the public lands. The State of Alaska retains the ability to manage all but subsistence

Coues's White-Tailed Deer

The Coues's deer of Arizona and New Mexico inhabit oak woodlands in southern and central mountain areas of both states. Unlike their eastern cousins, these small deer are found in small herd groups that remain in yearlong home ranges.

Table 1. Acreage (000) of Big Game Habitat on BLM Public Lands by State.

Species	AK	AZ	CA	CO	ID	MT ¹	NM	NV	OR ²	UT	WY	Total ³
Barbary Sheep							270					270
Bison	300									287		587
Black Bear	56,400	218	355	2,516	674	533	88	10	2,186	1,573	1,475	66,028
Black-Tailed Deer	500		625						2,342			3,467
Caribou	33,021											33,021
Grizzly Bear	66,309				24	28			5		49	66,415
Iranian Ibex							62					62
Javelina		7,935					568					8,503
Moose ⁴	36,403			10	255	112			19	222	970	37,991
Mountain Goat	1,360				8	31			5		12	1,416
Mule Deer		11,507	4,261	8,027	9,524	5,855	5,995	17,261	7,699	14,531	15,431	100,091
MuskOx	250											250
Pronghorn		1,413	2,034	1,963	8,251	4,554	3,340	9,954	5,216	8,224	8,402	63,351
Rocky Mtn. Elk		34		4,898	2,945	1,280	911	573	1,087	2,805	4,612	19,145
Roosevelt Elk			55						1,837			1,892
Tule Elk			85									85
White-Tailed Deer		769		11	233	472	150		161		432	2,228
Wild Pig			437									437

¹ Includes BLM public land acreage in North and South Dakota.

² Includes BLM public land acreage in Washington.

³ Total acreage, which includes species habitat overlap.

⁴ Figures for Alaska and Shiras moose are combined.

Table 2. Overall Population Trend and Estimate of Big Game on BLM Public Lands.

Overall Population Trend ¹	Population Estimates Western States ²	Population Estimates Alaska ²
Increasing		
Rocky Mountain Elk	159,000	_____
Moose	4,752	47,400
Mountain Goat	422	350
Musk Ox	_____	25
Caribou	_____	785,000
Stable		
Pronghorn	159,104	_____
White-Tailed Deer	200,000	_____
Iranian Ibex	510	_____
Barbary Sheep	678	_____
Wild Pig	3,400	_____
Black and Grizzly Bears	7,615	9,000
Bison	448	550
Javelina	19,880	_____
Declining		
Tule Elk	1,000	_____
Mule Deer	1,000,000	_____
Black-Tailed Deer	404,439	625
Roosevelt Elk	16,369	_____

¹ Big game population trends are projected to all BLM public lands based on the collective knowledge and estimates from professional BLM wildlife biologists, and may not be applicable for individual states. For example, mule deer populations are increasing in Wyoming on public lands while in other states, populations are stable to decreasing from population trends of 10-15 years ago.

² Public Land Statistics, 1991, U.S. Department of the Interior, BLM.

uses on Federal public lands, as well as all other uses of public lands.

Big game populations on public lands provide tremendous recreational opportunities for the American public. An estimated 5.4 million recreation days were spent big game hunting on BLM lands and an

additional 2.4 million recreation days were spent on nonconsumptive uses of all wildlife (Tables 3 and 4). This level of recreation translates into significant economic benefits to the economies of the Western States. The total net economic value of deer and elk hunting on BLM public lands in the Western States is approxi-

mately \$153 million. An additional \$63.9 million is estimated to be generated by nonconsumptive wildlife-oriented trips.

In Alaska and those Western States with large populations of big game animals, the public lands administered by BLM are the cornerstone of both big game populations and rural economies. Wildlife agencies benefit from the revenue derived from the sale of hunting licenses. Resident and nonresident hunters and other recreationists utilizing big game resources

also expend additional monies for items such as gasoline, meals, lodging, and special equipment, largely in rural areas. The impact of these sales is often essential to the well-being of rural economies. To illustrate the statewide economic importance of big game hunting expenditures, SWAs recently estimated revenues of \$187 million in Colorado, \$134 million in Wyoming, \$103 million in Montana, \$78 million in Arizona, \$14 million in Nevada, and \$20 million in Alaska.

Table 3. Estimated Number of Deer, Elk, and Other Big Game Hunting Days and Net Value of Hunting Trips on BLM Public Lands (from the 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, U.S. Fish and Wildlife Service, Department of the Interior).

States	Deer		Elk		Other Big Game	
	Hunter Days	Net Economic Value (\$000)	Hunter Days	Net Economic Value (\$000)	Hunter Days	Net Economic Value
Alaska	DNA ¹	DNA	DNA	DNA	DNA	DNA
Arizona	345,584	11,771	24,913	992	212,071	DNA
California	504,639	13,262	DNA	DNA	DNA	DNA
Colorado	212,097	7,597	226,906	8,867	26,606	DNA
Idaho	319,864	10,354	182,785	7,476	33,357	DNA
Montana	251,313	6,478	169,975	6,785	67,867	DNA
Nevada	147,413	6,321	DNA	DNA	62,067	DNA
New Mexico	196,144	6,790	17,347	477	30,295	DNA
Oregon	597,764	16,614	236,789	6,495	148,120	DNA
Utah	742,164	23,809	75,916	2,251	83,485	DNA
Wyoming	248,803	8,203	187,817	8,275	103,101	DNA
Totals	3,565,785	\$111,199	1,122,448	\$41,618	766,969	DNA

¹ DNA means data not available.

Table 4. Estimated Number of Visitor Days and Net Value of Primary Nonconsumptive Trips to BLM Public Lands (Connelly and Brown, Estimates of Nonconsumptive Wildlife Use on Forest Service and BLM Lands, Cornell University, 1988).

States	Number of Days on Primary Nonconsumptive Trips ¹	Net Economic Value on BLM Public Land (\$000) ²
Alaska	73,372	686
Arizona	368,327	6,001
California	896,051	27,931
Colorado	191,814	4,707
Idaho	291,012	10,968
Montana	30,515	465
Nevada	101,882	2,486
New Mexico	68,974	1,993
Oregon	184,397	4,693
Utah	108,018	2,996
Wyoming	47,656	1,011
Totals	2,362,018	63,937

¹ Primary nonconsumptive trip is defined as a trip of at least 1 mile from home for the primary purpose of observing, photographing, or feeding wildlife.

² Net economic value was calculated by subtracting a person's current cost per trip from the greatest cost they were willing to pay (\$300), and dividing that by 2.

Alaska's Big Game

Alaska's big game habitat acreage is one-quarter of the total acreage found on BLM public lands. Approximately 90 percent of the moose populations, 40 percent of the bear populations, and all of the caribou populations are found in Alaska. Grizzly bears in Alaska far outnumber grizzlies in the lower 48 States. Musk ox are occasional residents on BLM public lands, but with 8 million acres of potentially suitable habitat, introduction of musk ox are planned for the future.



Current Habitat Management Efforts

Big game species, like other wildlife, are an important resource and occupy a variety of landscapes with diverse plant and animal communities. BLM's program to manage ecosystems for biodiversity will provide benefits to many species of wildlife, including big game, by managing forage and plant cover diversity. Managing these plant communities for biological diversity requires information on plant succession, seral stages, vertical structure, and plant composition over large geographical areas, as well as detailed information on a wide range of plant and animal interactions.

Inventory and Monitoring

Development and maintenance of habitat data on BLM public lands are the basic requirements for effective management of big game habitat. Inventory is necessary to establish baseline data both for monitoring areas where potentially competing uses may limit future management options and for assessing habitat potential.

BLM has developed a multifaceted approach to inventory habitats on the public lands. To maximize effectiveness and returns from the financial resources available for inventories, BLM routinely completes inventories as activity plans are developed for BLM public lands. Additionally, broad-scale habitat inventories have been completed for unique lands, such as roadless areas and riparian and wetland areas. Site-specific habitat inventories are also routinely completed for areas that may be impacted by land and resource development proposals, as part of the analysis required by the National Environmental Policy Act (NEPA).

Habitat areas identified as being essential to maintaining big game life cycle requirements are called Key Habitat Areas. Currently 32 million acres (35 percent) of Key Habitat Areas have been inventoried with a need to inventory an additional 60 million acres of BLM public lands (see Table 5 on page 19).

Monitoring within Key Habitat Areas is currently being conducted on 21 million acres to provide ongoing assessments of big game habitat conditions and trends. This is approximately 28 percent of the total acres (76 million) requiring monitoring in Key Habitat Areas (see Table 9 on page 23). Lack of more complete

inventory and monitoring information has limited BLM's ability to quantify forage availability and habitat capacities for big game and livestock, to determine habitat potential, and to develop specific big game habitat management objectives.

Big Game Habitat Assessment

Since complete inventory and monitoring information on the public lands is not available, BLM managers have relied on the professional judgement of technical experts within BLM and SWAs regarding habitat condition information for each of the 19 big game species addressed in this strategy plan. For each species, existing habitat conditions were estimated by the season of use (i.e., yearlong, winter, summer, or transitional ranges). Transitional habitats are those traversed by big game species during some part of the year (seasonal movement between summer and winter ranges). Habitat condition ratings (good, fair, or poor) were assessed on the basis of availability of food, water, cover, space, arrangement of desirable improvements, and competing land use practices rather than on ecological site potential information. Condition ratings were quantified in acres and expressed as a percentage of the total acreage for each seasonal habitat type.

Analyses of these data provided insight into the areas of particular concern for big game habitat management on BLM public lands. The most frequently identified factor resulting in a fair-to-poor rating for habitat conditions for Rocky Mountain elk, mule deer, and pronghorn antelope was related to forage and distribution conflicts between these species and domestic livestock. Although livestock grazing management systems have resulted in good-to-excellent ratings in many Resource Areas, conflicts between livestock and big game were identified as serious problems. Thirty-six percent of the 80 BLM field offices in the five major states with Rocky Mountain elk habitat (Colorado, Idaho, Montana, Utah, and Wyoming) identified elk/livestock conflicts; 43 percent of the 109 Resource Areas managing mule deer habitats reported conflicts with livestock as being a major concern; and

Elk

Elk are found primarily in the mountainous portion of the West. A hundred years ago, elk faced near extinction from wanton market hunting for meat and salable canine teeth (tusks). Three subspecies of elk inhabit public lands—Rocky Mountain elk (Colorado, Montana, Idaho, New Mexico, Oregon, Utah, Washington, and Wyoming), Roosevelt elk (California, Oregon, and Washington), and Tule elk (California only). Crucial to maintaining elk populations are wintering habitat areas amounting to approximately 8.4 million acres of BLM public lands.



38 percent of the 93 Resource Areas reported livestock forage conflict as a major concern in habitat conditions for pronghorn (questionnaire).

Road densities (typically those roads associated with timber harvest activities) and associated increase of human activity in previously unroaded areas were identified as a major problem for Rocky Mountain elk habitats in several states. Half of the Resource Areas managing habitat for Roosevelt elk and black-tailed deer identified increasing road densities as the prominent factor resulting in fair-to-poor habitat ratings for these species. Other activities contributing to fair-to-poor ratings included timber harvests and the conversion of natural plant communities to less

desirable plant species. Increasing road densities were also identified as detrimental to black bear habitats (questionnaire).

Fire suppression in climax plant communities has resulted in fair-to-poor conditions for black-tailed deer habitats. Major concerns for pronghorn habitat, in addition to livestock distribution, were fences acting as barriers to movement, poor distribution of water, and habitat fragmentation. In 21 percent of 58 Resource Areas, habitat fragmentation was a major problem for managing black bear habitat in the Rocky Mountain region (questionnaire).

Livestock are herbivores and may compete with big game for food, particularly if habitat conditions

are less than optimum. Management of livestock on the public lands greatly influences the number and distribution of big game animals on those public lands and adjoining private lands. Big game habitat assessment on public lands must include a consideration of the potential for habitat conflicts on adjoining private lands. In some cases, big game damage on private lands has fostered antagonistic relationships between landowners, SWAs, and BLM, and has reduced landowner tolerance towards big game.

BLM is a partner in SWA efforts to resolve big game/livestock conflicts and big game damage on private lands. All SWAs have programs to address big game damage on private lands. Some states reimburse private landowners for damage; provide fencing or supply other prevention materials to landowners; or hold special hunts to remove depredating big game animals, reduce overall game animal populations, or redistribute big game animals on public and private lands. BLM is involved with SWAs in innovative programs to improve big game range, resolve habitat conflict issues, and address private land concerns. Most notable are the Colorado Habitat Partnership Program, Oregon's Green Forage Program, and Idaho's Landowner-Sportsman Relations Program.

Habitat Enhancement Programs

In the past 20 years, the BLM has initiated several habitat improvement programs to improve the quality and quantity of big game habitat. For example, using funds appropriated from BLM wildlife programs and funds provided by SWAs, private groups, public land permittees, and others, BLM has implemented more than 350 Habitat Management Plans (HMPs). Over this period of time, \$28.5 million has been spent on BLM public lands to enhance and manage big game habitat. Habitat improvement projects have featured vegetation management for improving forage production, palatability, and availability on winter ranges. Common management practices include mechanical manipulation, prescribed burning, development of water sources, fencing of riparian areas, road closures for access management, and seasonal use road restrictions.

An element of habitat enhancement lies in the adjustment of BLM land ownership boundaries. Many important parcels of big game habitat have been identified for acquisition because of their location in

relation to crucial habitats adjacent to public land. Other parcels that have greatly reduced values for wildlife (but often enhanced values for human development) have been used for exchange purposes. Land exchanges, acquisitions, and easements may be used to enhance public access to isolated BLM parcels or other areas important for hunting, wildlife viewing, or other recreational access. When identified through the BLM planning process, land exchanges improve BLM management options for big game habitats while reducing conflicts with private landowners.

Research

Lack of research facilities and available personnel has limited BLM research on big game habitat. Research conducted or funded by BLM is designed to answer specific questions that can be applied to on-the-ground management. Most funded research projects are contracted to universities and SWAs with research capabilities. Research proposals are submitted to a Bureauwide research committee, evaluated, and prioritized along with other resource program proposals. Wildlife research projects funded wholly or in part by BLM consist mainly of investigating specific big game species habitat requirements and improving the ability to predict consequences of surface use action on wildlife resources.

Partnerships

The BLM strives to manage big game habitat in close partnership with other public and private users of the Nation's public lands. Key partners in these efforts are SWAs and natural resource conservation agencies. SWAs have direct management authority for wildlife populations, whereas BLM has authority for habitat management on the public lands. Cooperative ventures with these agencies result in shared habitat improvement projects, such as vegetation studies and habitat improvement efforts, and in shared data on big game research, populations and surveys, transplants, and introductions.

Users of the public lands administered by BLM also play an important partnership role. Livestock grazing permittees and their organizations often contribute to range improvement. While these efforts are typically directed toward improving range conditions for livestock, big game animals may benefit from specific range improvement projects

Javelina

Javelina are found in the Chihuahuan and Sonoran Deserts of the Southwest. Commonly called "pigs," these small new world natives are actually Peccaries, a distant cousin to wild boars and barnyard pigs. Peccaries are timid by nature, and gather in herds. They are primarily vegetarians and eat prickly pear cactus; shin-dagger agaves are their favorite. Javelina have a distinctive odor and mark home ranges. Javelina are considered a game animal in Arizona, New Mexico, and Texas.



such as water development and fences to improve livestock distribution.

Other partners with BLM are private wildlife conservation organizations. These groups are supported by donations, and typically provide funding that is matched with BLM dollars through the Challenge Cost Share Program. Funding is directed into a variety of projects that benefit wildlife resources on public lands.

New sources of revenue for improving big game habitat on public lands are being pursued. One of the most innovative is New Mexico's Sikes Act Stamp Program. This program is the result of a joint venture between BLM, Forest Service, New Mexico Department of Game and Fish, and sportsmen of New Mexico.

The Sikes Act (Public Law 93-452) includes a provision authorizing SWAs to sell a stamp to collect money to manage wildlife populations and improve habitats on public lands. The New Mexico program implements this provision of the Sikes Act, and requires sportsmen in New Mexico to purchase a stamp, currently costing \$5.25, to hunt, trap, or fish on public lands. This program will provide an estimated \$800,000 annually for big game habitat improvement projects in New Mexico. Proposed projects are reviewed and prioritized by a Citizens' Review Committee and then submitted to the State Game Commission for approval. Montana and Wyoming also have stamp programs to improve habitat on public lands. Another innovative

program has been developed in California. The Deer Herd Management Plan Implementation Program is a deer hunter-supported program that provides funds to implement the state's deer herd management plans.

These dollars are used in concert with the Challenge Cost Share Program to improve habitat conditions for deer on BLM lands. Programs similar to these could be established in other Western States.

Deer

Deer are the most widespread big game species occurring throughout the Western United States. Based on genetic and morphological differences, deer are commonly grouped into mule deer, white-tailed deer, and black-tailed deer. Large concentrations of mule deer are associated with mountain terrain and mesic vegetation types in the Rocky Mountain and intermountain states. Mule deer typically migrate between their high-elevation summer range to low-land winter range. White-tailed deer are widely distributed and are found in every state except Alaska, California, Nevada, and Utah. These deer are extremely adaptable and found in a variety of habitats, primarily riparian-deciduous forests and low-elevation woodlands. Black-tailed deer range along a narrow belt of the west coast in California, Oregon, and Washington and coastal islands of southeastern Alaska. All deer populations are sensitive to climatic conditions of prolonged drought, extended cold temperatures, and snow depths. Optimal deer habitat contains a mosaic of plant communities in all stages of succession. Probably the most noticeable limiting habitat factor for deer is plant diversity and forage availability on critical seasonal ranges.



Management Opportunities and Recommended Implementation Strategies

BLM's overall goal for big game habitat management from *Fish and Wildlife 2000—A Strategy for the Future* is to:

“Ensure sufficient habitat quantity and quality to maintain and enhance viable big game populations, and to sustain identifiable economic and social contributions to the American people.”

To achieve this overall goal by the year 2000, the following specific management goals and recommended implementation strategies have been identified.

Inventory

Although inventory information on habitat condition and potential carrying capacities for BLM public lands is lacking in most areas, big game data featuring long-term population trend and survey information is typically available from SWAs. Approximately 28 percent of the 622 Key Habitat Areas have been inventoried in sufficient detail to develop specific big game habitat objectives for existing activity plans (Table 5). Based on BLM questionnaire data, 43 percent of those Key Habitat Areas that have been inventoried require additional habitat information to complete preparation of activity plans and establish baseline data sufficient for monitoring.

Goal

Inventory big game habitats to assess conditions, trends, and potential to identify management opportunities and needs.

Recommended Strategies

1. Inventory and assess existing big game habitat conditions and potential.
 - a. Prioritize areas of high value for big game, which have been identified as Key Habitat Areas, for future inventories.

- b. Determine ecological site potential and quantify big game carrying capacity using the Ecological Site Inventory (ESI) method.
 - c. Standardize habitat inventory methodology and definitions.
 - d. Integrate vegetation inventories with other resource programs to share information and cost.
2. Cooperate with SWAs to integrate vegetation inventory data with big game population data and livestock use to quantify big game habitat capacities and potentials.
 - a. Establish a standardized Geographic Information System (GIS) data base in cooperation with SWAs to expedite sharing of big game and livestock management information.

Table 5. Acreage and Inventory Funding Needs Through the Year 2000 in Key Habitat Areas by State.

State	Acres (000) Inventoried		Estimated Inventory Costs (\$000)
	Existing	Needed	
Alaska	2,821	25,282	2,200
Arizona	1,748	1,596	210
California	2,549	1,548	250
Colorado	1,716	3,775	370
Idaho	2,553	3,825	420
Montana	1,856	1,536	210
Nevada	8,525	8,435	910
New Mexico	1,042	2,704	320
Oregon	869	4,070	510
Utah	5,459	3,401	390
Wyoming	3,234	4,293	530
Totals	32,372	60,465	6,320

Activity Planning

The Resource Management Plan (RMP) process is the first planning level where fish and wildlife habitat objectives and issues are identified. Development of individual resource activity plans, such as for habitat management, livestock allotment management, areas of critical environmental concern, riparian/wetland areas, and forestry, are the next level of planning. Currently, over 350 activity plans are guiding big game habitat management activities on approximately 70 million acres. An additional 576 resource activity plans requiring revision or development of big game habitat objectives and standards of performance have been identified (Table 6). Big game habitat areas are distinguished as Key Habitat Areas to focus future integrated resource activity planning and habitat management. A Key Habitat Area is a geographical area with essential habitat components, physical and/or biological, to complete life cycle requirements of big game animals.

BLM does not have sole management authority over all resources on public lands. Land ownership patterns are often interspersed, and management of big game populations is regulated under state authority. Big game animals do not recognize land ownership boundaries, and their mobile nature allows them to move from area to area. Thus for activity plans to be effectively implemented, all of these factors must be considered, along with competing demands for similar resources. Partnerships and cooperative agreements must play a major role where big game animals depend upon lands of multiple ownership for their existence.

Interactions between big game and livestock on BLM public lands have historically generated controversy. However, there are examples wherein cooperative efforts between BLM and SWAs to establish big game and livestock habitat and management objectives have been successful. To achieve success in avoiding controversy, BLM and SWAs must identify and regularly update big game and livestock objectives on an area-specific basis, and incorporate these objec-

Table 6. Activity Plan Development and Associated Costs Through the Year 2000 for Key Habitat Areas by State.

State	Number of Key Habitat Areas	Number of Activity Plans Needed ¹	Estimated Cost (\$000) ²
Alaska	12	Undetermined	Undetermined
Arizona	46	46	828
California	64	52	936
Colorado	72	70	1,260
Idaho	63	60	1,080
Montana	42	42	756
Nevada	82	79	1,422
New Mexico	46	36	648
Oregon	74	74	1,332
Utah	85	81	1,458
Wyoming	36	36	648
Totals	622	576	10,368

¹ Number of resource activity plans requiring development or revision of big game management objectives to meet expected performance standards.

² Represents the average cost (\$18,000) of preparing activity plans.

tives in updated activity plans along with data obtained through monitoring and research.

Goal

Restore, maintain, and improve big game habitat conditions on BLM public lands by incorporating SWA objectives and implementing activity plans and other integrated resource plans.

Recommended Strategies

1. Implement management actions where needs are the greatest.
 - a. Target Key Habitat Areas (Appendix B).
 - b. Develop a schedule for preparing integrated resource plans to meet desired plant community objectives for big game as established in existing land use plans.
 - c. Prepare or revise 55 percent of needed activity plans by the year 2000.
2. Coordinate all integrated resource plans with SWAs' big game strategic plans.
 - a. Activity plans will include updated habitat objectives and big game population goals if the need or conflict issue is identified.
 - b. Revise existing RMPs to include big game habitat objectives and vegetation management guidelines for Key Habitat Areas.
3. Develop and implement an interagency cooperative management program for a featured area with BLM public land to showcase the strategies developed in this Big Game Habitat Management Strategy Plan.
 - a. Select an area consistent in size with a State-recognized big game management unit.
 - b. Develop integrated habitat management objectives for the featured area.
 - c. Identify desired big game population objectives for the featured area.

- d. Work with featured area livestock and other permittees to achieve multiple-use and sustained yield goals and objectives.
- e. Design monitoring to measure response.
- f. Develop cost-share management and monitoring activities.
- g. Establish statewide interagency/cooperator oversight committees to prioritize areas and evaluate the management approach.

Habitat Improvement and Project Maintenance

Habitat improvement projects are designed to augment the availability and quality of forage, improve distribution of animals, and enhance animal abundance. Proposals for big game habitat improvements are developed and coordinated within the framework of existing land use plans, resource activity plans, SWAs' plans, and habitat plans of other management agencies such as U.S. Forest Service and National Park Service. Project maintenance and funding must be assured to protect initial investments.

Goal

Ensure that fiscal resources are invested where the greatest benefits can be derived to maintain and enhance big game habitats.

Recommended Strategies

1. Focus habitat improvement projects in priority Key Habitat Areas (Table 7).
 - a. Develop cooperative funding agreements with SWAs, private conservation organizations, and other groups as appropriate to meet the BLM big game habitat management objectives.
2. Secure funding to maintain habitat improvement projects and facilities (Tables 7 and 8), including annual maintenance during life of project.
 - a. Seek maintenance agreements with other agencies, private cooperators, and

Table 7. Types of Improvement Projects Needed in Key Habitat Areas.

Habitat Project	Units	Number of Key Habitat Areas Identified With Need
Catchments/Guzzlers	1,888	237
Dams/Reservoirs	2,209 acres	71
Enclosures	10,896 acres	98
Fence	2,749 miles	176
Fence Modification	979 miles	18
Fertilization	45,000 acres	60
Pipelines	218 miles	35
Prescribed Burns	4,440,000 acres	254
Reseeding	268,000 acres	151
Road Closure—Restriction	627 miles	41
Springs	958	159
Weed Control	60,000 acres	64
Well/Storage Facilities	106	28
Vegetation Manipulation—Chemical	13,000 acres	4
Vegetation Manipulation—Mechanical	2,417,000 acres	173

Table 8. Fiscal Resources Required for Development of Projects Through the Year 2000 and Annual Maintenance Cost in Key Habitat Areas by State.

State	Development Cost (\$000)	Maintenance Cost (\$000) Per Year	Number of Key Habitat Areas
Alaska	Undetermined	Undetermined	12
Arizona	1,165	191	46
California	1,507	164	64
Colorado	2,563	153	72
Idaho	1,389	183	63
Montana	1,173	132	42
Nevada	1,378	213	82
New Mexico	718	182	46
Oregon	3,610	347	74
Utah	3,361	183	85
Wyoming	1,753	135	36
Totals	18,617	¹ 1,883	622

¹ Total projected estimate through the year 2000 is \$11,298,000.

volunteer organizations to share costs and create public support.

3. Develop big game habitat project lists on an annual basis with SWAs and establish partnerships to provide assistance and contributions for implementation through Challenge Cost Sharing.
 - a. Encourage partnerships with private organizations having an interest in big game management.
4. Coordinate with SWAs to complete necessary habitat improvements and biological evaluations for big game introductions identified in RMPs.
5. Evaluate effectiveness of habitat improvement projects and practices to accomplish biological and social objectives.

Monitoring

Monitoring is the mechanism to detect the effectiveness of management prescriptions to implement better management decisions. Monitoring must yield

reliable information allowing evaluation of project objectives. Habitat, big game population trends, and livestock numbers and use should be monitored using standardized methods. This approach will require cooperation between BLM and the appropriate SWAs.

Goal

Develop and implement a standardized and quantifiable monitoring system to track management progress.

Recommended Strategies

1. Identify Key Habitat Areas as high priorities for BLM big game monitoring studies.
 - a. Coordinate these priorities with SWAs.
 - b. Allocate costs among agencies and programs (Table 9).
2. Coordinate big game monitoring studies in Key Habitat Areas with State Wildlife Agencies and all other BLM monitoring efforts.

Table 9. Acreage and Annual Funding Needs for Monitoring Activities in Key Habitat Areas by State.

State	Acres (000) Monitored		Estimated Monitoring Costs (\$000) Per Year
	Existing	Needed	
Alaska	2,156	22,139	420
Arizona	818	1,243	250
California	1,160	1,493	200
Colorado	398	1,427	370
Idaho	839	4,097	250
Montana	958	1,613	350
Nevada	7,968	8,910	450
New Mexico	842	3,000	340
Oregon	1,412	3,358	300
Utah	3,813	2,715	330
Wyoming	1,149	4,742	390
Totals	21,513	54,737	¹ 3,650

¹ Total projected cost is \$21,900,000 through the year 2000.

3. Design vegetation monitoring studies, where needed, to differentiate big game and livestock utilization levels and to document population numbers and period of use.

Habitat Protection

Availability of important habitat types is critical to population growth and maintenance, and to the overall health of big game populations. Opportunities for BLM to acquire or consolidate important habitats are rare, but occasionally arise. The BLM must quickly respond when opportunities exist. By securing important habitats through acquisition or exchange, BLM can more effectively accomplish its goals for resource management and protection.

BLM lands are extensive, diverse, and managed for benefits to all citizens. In some cases, access to these lands is insufficient for management purposes, while in other situations, control of access is desirable to meet management objectives. Need for a total of 72 access easements has been identified in the 622 Key Habitat Areas to allow more effective management (questionnaire). Controlling human access to important wildlife habitats, either by opening new roads or closing existing access, can dramatically improve BLM's ability to achieve management goals for big game habitat and populations. Control of access can also provide additional opportunities for recreation and other resource management that can significantly benefit local economies.

Goal

Improve management capabilities and opportunities to provide public access to wildlife resources through securing inholding and other land parcels.

Recommended Strategies

1. Acquire, primarily through exchange, approximately 1.2 million acres to consolidate surface management of crucial big game habitat (Table 10).
 - a. Maintain a current list of land tenure adjustment needs in each BLM District for input into the statewide land exchange pool program.
 - b. Develop proposals for big game habitat acquisition using State and private

conservation organizations as sources for matching funds.

2. Review all existing withdrawals and proposed land exchanges to ensure big game habitat management responsibilities are consistent with RMP objectives.
3. Actively negotiate with the appropriate agencies, organizations, or individuals to attempt to secure selected lands to benefit and facilitate management of big game habitats.
4. Develop mitigation measures and surface use stipulations to avoid or minimize impacts to big game and their habitats.
 - a. Include big game habitat objectives and strategies in development of BLM road management policies.

Research

Habitat studies and research provide an information base for making resource management decisions. Research programs often require a long-term commitment of personnel and funding (Table 10). To maximize return on investments and usefulness of data, cooperative interagency, and sometimes interstate, research projects are desirable. BLM resource managers surveyed indicated a need for habitat research on mule deer, pronghorn, Rocky Mountain elk, moose, and black bear.

Goal

Fund and support research that results in knowledge that can be applied to management of big game habitat.

Recommended Strategies

1. Initiate cooperative research projects to improve ecosystem management of big game habitat.
 - a. Establish guidelines for achieving desirable plant utilization levels for specific plant communities occupied by grazing ungulates.
 - b. Determine habitat factors affecting the timing and movement of big game animals.

Table 10. Estimated Funding Needs Through the Year 2000 for Research and Habitat Protection in Key Habitat Areas by State.

State	Research (\$000)	Habitat Protection Through Land Exchanges and Withdrawals (\$000) ¹
Alaska	Undetermined	Undetermined
Arizona	100	280
California	110	420
Colorado	370	370
Idaho	450	330
Montana	275	240
Nevada	150	360
New Mexico	250	300
Oregon	550	405
Utah	355	330
Wyoming	350	305
Totals	2,960	3,340

¹ Estimated cost (workmonths).

- c. Assist SWAs by funding research to develop improved habitat monitoring techniques.
2. Coordinate research and study needs regarding big game habitats with SWAs at scheduled annual interagency planning meetings.
3. Correlate big game habitat relationships to Ecological Site Inventory (ESI) data.
4. Evaluate effectiveness of reclamation, mitigation factors, and habitat improvement projects with regards to use of habitats by big game species.

Outreach

Successful implementation of this plan depends upon the understanding and support of various public land users and others interested in the management of BLM public lands. Outreach efforts must begin within BLM where success depends in part on integrating the big game habitat management program with other

BLM resource programs. Information must be shared internally to allow development of common, cost-effective resource management objectives and opportunities. Outreach efforts must include development of partnerships to achieve common goals, education about the mission and programs of BLM, and feedback to ensure that BLM is sensitive to public desires concerning big game habitat management.

Goal

Enhance public understanding of managing big game habitat in relation to other resource programs.

Recommended Strategies

1. Encourage high levels of professionalism among BLM personnel by allowing participation in professional meetings and organizations and attendance at workshops.
 - a. Encourage professional publications.

- b. Sponsor or cosponsor professional meetings, big game workshops, and management seminars.
- 2. Meet at least annually with conservation partners to review progress toward common goals, exchange information, and coordinate management actions at national, state, and local levels.
 - a. Sponsor field trips to demonstrate habitat management efforts.
 - b. Provide annual progress reports to track accomplishments in implementation of this plan.
- 3. Develop and disseminate biological diversity interpretive materials characterizing the ecology of big game.
 - a. Seek opportunities to showcase big game habitat ecosystem management.
- 4. Promote big game viewing opportunities.
 - a. Support the BLM Watchable Wildlife initiative.
 - b. Encourage development of State wildlife viewing guides.
 - c. Identify wildlife viewing areas and develop interpretive materials to educate the public on wildlife habitat and population management principles.
- 5. Support continuation of big game hunting on public lands.
 - a. Develop and enforce access management plans on public lands.
 - b. Provide area maps and disseminate hunting and hunter information at designated interpretive sites.
 - c. Develop interpretive materials to educate the public on the role of hunting in managing big game populations and their habitat.

- d. Provide assistance to SWAs in enforcing State and local wildlife protection laws and regulations.

Coordination/Partnerships

Increased public interest in wildlife on BLM public lands will necessitate effective partnerships to achieve the habitat strategies outlined in this document. BLM is committed to maintaining positive working relationships with other agencies, private landowners, and conservation groups. BLM intends to accomplish this work through a coordinated program of big game resource administration focusing on a concept of total ecosystem management which includes biological diversity.

Partnerships will be developed that strengthen the ability of BLM to achieve its big game management goals while furthering the goals and objectives of other agencies and special interest groups. For example, partnerships with SWAs will provide for maintenance of the biological integrity of ecosystems, consistent with RMPs. Existing Memorandums of Understanding (MOU) must be reviewed and revised as necessary. Partnerships with other special interest groups may focus on achieving mutually-desired goals for single big game species when consistent with an ecosystem management approach to sustain biological diversity. Vital to these partnerships is the maintenance and expansion of the Challenge Cost Share Program.

Goal

Generate public awareness of and support for partnerships to accomplish big game habitat management goals and objectives.

Recommended Strategies

- 1. Review and establish partnership agreements and MOUs, and update as necessary.
- 2. Continue and support expansion of Challenge Cost Share agreements with conservation partners.
- 3. Coordinate implementation of the BLM big game HMPs with wildlife strategic plans developed by SWAs.

- a. Ensure that SWAs are full partners in, and signatory to, HMPs and other integrated resource plans.
 - b. Seek participation of conservation partners in the big game habitat management planning processes.
 - c. Ensure that BLM planning documents and research data are distributed among conservation partners.
 - d. Explore interagency personnel loan programs to integrate management plan development.
 - e. Establish a formal process to implement the management objectives of SWA strategic species plans and BLM activity plans. Develop a formal review system to assess progress on plan implementation.
- 4. Respond to big game habitat conflict issues on BLM public lands and adjoining or interspersed private lands.
 - a. Cooperate with affected interest groups to resolve concerns.
 - b. Develop resource objectives that promote ecosystem management featuring the

Caribou

Caribou are yearlong residents of some of the harshest landscapes on the North American Continent. The barren-ground caribou, one of five subspecies, inhabits the arctic tundra and boreal forest of Alaska and occupies extensive areas of BLM public lands. Caribou eat a more diverse plant diet than other deer species with a preference for green plant parts, lichens, and mushrooms. The gregarious behavior of caribou makes it relatively easy to monitor populations and migratory routes with aircraft. Since the 1970's, caribou herds in Alaska have nearly doubled to approximately 1 million in 1990. Their preferred food is found in early seral stages in spring and summer, while lichens, their primary winter forage, only occur in older plant communities. The most effective means to maintain caribou habitat is to manage wildland fire to preserve a heterogeneity of stand age classes. International coordination and agreements with Canada have been undertaken to coordinate regulations and enforcement because caribou migrate across national boundaries.



- health and sustainability of plant and animal communities.
- c. Ensure that big game habitat management objectives are integrated in new or revised allotment and other activity plans.
 5. Cooperate as partners with SWAs to develop new Challenge Cost Share funding programs.
 6. Establish a position of Big Game Program Coordinator on the Western Fish and Wildlife Staff, Boise, Idaho, to guide implementation of this Big Game Habitat Management Strategy Plan.

Pronghorn

Pronghorn numbers have increased from approximately 13,000 in the 1920's to over 1 million presently. In an earlier era, peak numbers of pronghorn may have exceeded those of the American bison. Two subspecies of pronghorn are Federally listed as endangered—Sonoran pronghorn (found in southern Arizona and the west-central plains of Sonora, Mexico) and the Peninsular pronghorn (found in Baja California). It is estimated that 15 percent of the nation's total pronghorn population is found on BLM public lands. Essential pronghorn habitat components include available water, mixed-succulent plant communities, grasslands, and sagebrush-shrub communities. Wyoming eclipses all other states in pronghorn numbers with a population of 450,000. Pronghorn also occur in large numbers in Colorado, Utah, Nevada, Idaho, Oregon, and Montana.



Future Demands

There are many factors that can affect big game habitat management on BLM public lands. For example, demands for certain land uses, such as increasing commodity production or meeting public demand for recreational opportunities, have the potential to

impact big game habitat. Each BLM field office has identified three significant factors impacting future management of big game habitat (questionnaire). These factors were grouped and totaled by individual species (Table 11).

Table 11. Summary of Significant Factors Affecting Future Management of Big Game Habitat and Number of BLM Field Offices Identifying Factors.

Big Game Species	Number of Field Offices Managing Habitat for Species	Significant Factors Affecting Future Habitat Management	Percentage of Field Offices Identifying Each Factor
Black Bear	58	Recreation Demands Vegetation Harvesting Road Density	100 78 62
Black-Tailed Deer	19	Veg. Monoculture Urbanization Road Density	100 100 76
Grizzly Bear	13	Road Density Recreation Demands Mineral Development	100 91 73
Javelina	9	Water Availability Wild Burros	100 87
Moose	23	Recreation Demands Mineral Development Road Density	86 86 81
Mule Deer	109	Road Density Recreation Demands Vegetation Harvesting	83 82 67
Pronghorn	93	Recreation Demands Vegetation Harvesting Water Availability	80 70 69
Rocky Mountain Elk	80	Recreation Demands Road Density Vegetation Harvesting	100 93 80
White-Tailed Deer	32	Recreation Demands Vegetation Harvesting Urbanization	97 83 63

The most commonly identified potential conflict was the future demand for recreational use of the public lands. Recreational demands ranked number one or two in all field offices for the major big game species. Concerns associated with increased recreational use are related to animal disturbance and vulnerability, associated with loss of sufficient security areas from human intrusion, off-road vehicle use, impacts from a larger number of recreationists, and promotion of more diverse types of recreation (i.e., wildlife viewing, hiking, backpacking, winter skiing).

A commonly identified problem is an increase in road densities on BLM public lands. As road construction and road mileage increases (typically associated with mineral development and timber harvesting), less area is retained where big game and

other wildlife can retreat from human disturbance. Vegetation harvesting refers to livestock grazing, timber harvest, and other activities where forage or cover is removed. Vegetation management was a prominent factor recognized by many of the field offices as a continuing concern in managing big game habitat.

The potential conflicts and demands affecting those big game species not listed on Table 11, including Roosevelt and Tule elk, caribou, mountain goat, bison, musk ox, barbary sheep, Iranian ibex, and wild pigs, are similar but less significant. Although management of exotic big game species is essential, expansion of the range of these species is considered undesirable. Ecosystem management emphasis will be given to native big game species and their management.

Exotic Species

Three exotic big game species inhabit approximately 1 million acres of BLM public lands in New Mexico and California. Barbary sheep and Iranian ibex are only found in New Mexico, and the wild pig is found in California. Such exotics, which have escaped from private game ranches or have been introduced to BLM public lands, occupy ecological niches thought not to be occupied by native big game species. These exotic species may be displacing desert bighorn sheep and deer that occupy similar habitat by competing for space and forage. BLM and State wildlife personnel discourage release of exotic big game in areas managed for native big game species.

Bear

Two species of bear are found on BLM public lands. The black bear ranges through Alaska and the continental United States with larger populations occurring in the northwest and mountainous states. The Federally listed grizzly bear is currently restricted to Montana, Wyoming, Washington, and Idaho, although it once ranged over most of the western United States. The grizzly bear found in Alaska is not a listed species and is widespread. Bears are large, free-ranging animals, with a low reproductive rate and lower population densities than most other big game species. Management opportunities involve avoiding forest fragmentation, access road densities, early seral stage clearcuts, and providing berry and mast-producing trees and shrubs. Travel corridors along streams or across inhabited valleys are important for dispersal and movement to feeding sites for both species of bear.



Program Implementation and Cost Summary

The big game habitat management program is an important resource component of BLM public land management. Big game species, as well as other wildlife species, will be managed as a resource component of the ecosystem and provide sustainable products and beneficial recreational uses for the American people. To successfully implement this strategy plan, the Key Habitat Areas identified in Appendix B will be integrated into the planning and management of other BLM resource programs. Funding demands, by state, to implement the major habitat components of the 622 Key Habitat Areas total over \$75 million (Figure 2).

These estimates include all costs associated with implementation over and above the funds required for general administration of the big game habitat program outside of these Key Habitat Areas.

Estimated costs by major program components have been identified by individual big game species (Table 12). These estimates are associated directly with implementation of the 622 Key Habitat Areas for those major species. The majority of Key Habitat Areas support more than one big game species and will require coordinated activity planning with integrated resource objectives.

Figure 2. Summary of Total Funding Needs by Major Program Components.

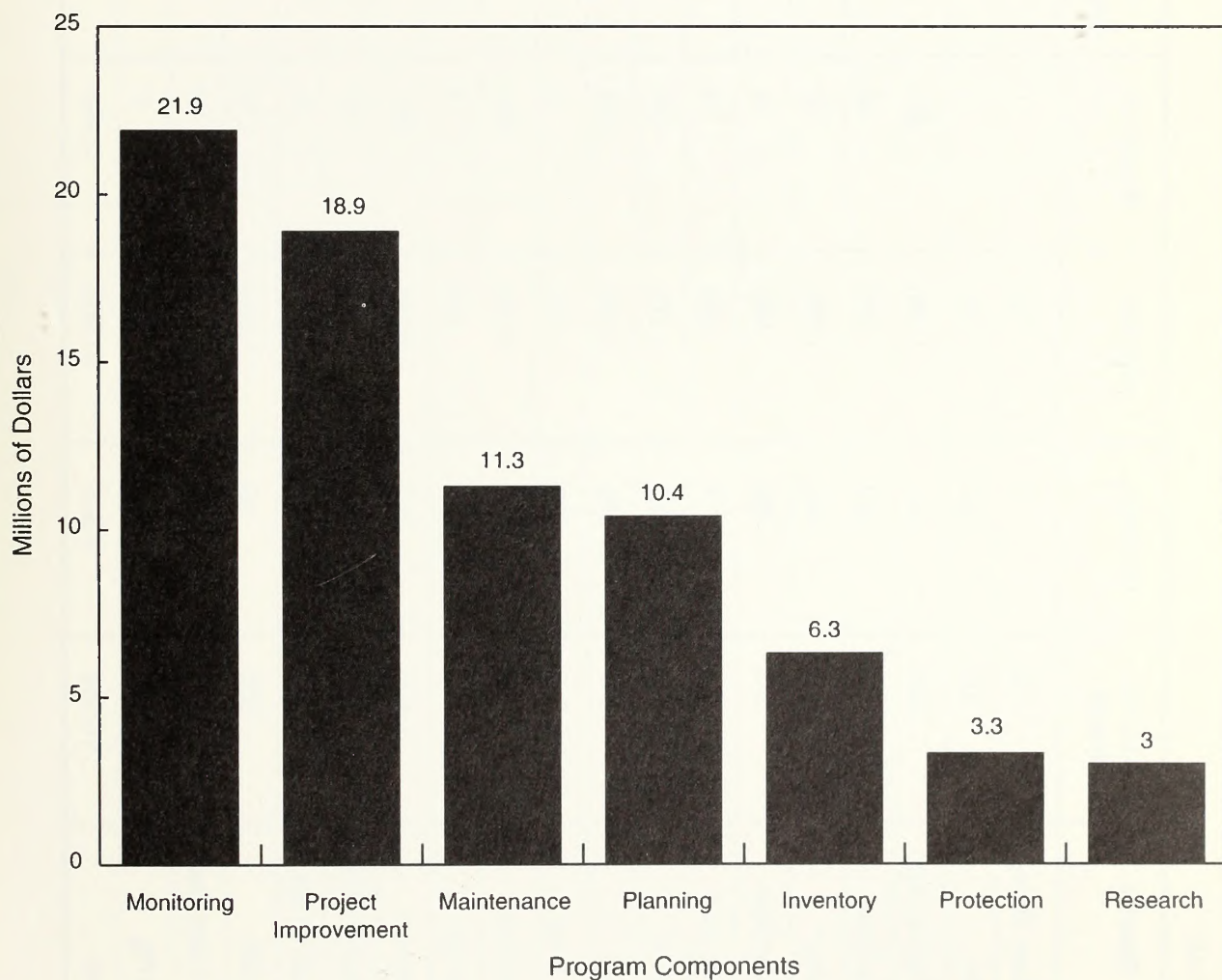


Table 12. Summary of Projected Fiscal Resource Funding Needs (\$000) of Each Big Game Species and Major Program Component Through the Year 2000.

Species	Activity Plans	Inventory	Monitor	Research	Habitat Maintenance	Habitat Improvement	Habitat Protection	Total (\$000)
Barbary Sheep	60	0	350	0	0	0	0	410
Bison	300	250	620	0	310	250	0	1,730
Bk-Tailed Deer	600	340	1,660	350	750	755	165	4,620
Black Bear	700	300	900	30	630	665	135	3,360
Caribou	410	890	1,000	90	515	310	30	3,245
Grizzly Bear	500	700	900	15	515	390	185	3,205
Iranian Ibex	90	0	365	0	70	0	0	525
Javelina	440	400	1,170	50	450	400	25	2,935
Moose	600	960	1,020	250	475	995	190	4,490
Mtn. Goat	340	280	920	0	110	80	0	1,730
Mule Deer	2,240	600	2,530	885	1,865	6,265	1,000	15,385
Musk Ox	50	200	300	0	0	0	0	550
Pronghorn	1,500	750	2,150	395	1,775	3,430	500	10,500
Rocky Mtn Elk	1,400	340	2,350	730	1,900	3,245	950	10,915
Roosevelt Elk	568	170	1,825	75	760	1,195	75	4,668
Tule Elk	300	90	1,980	55	525	435	35	3,420
Wh-Tailed Deer	270	50	1,400	35	650	475	50	2,930
Wild Pig	0	0	460	0	0	0	0	460
Totals	10,368	6,320	21,900	2,960	11,300	18,890	3,340	75,078

Appendix A

Habitat Assessment Summaries for Each Big Game Species

Acreage estimates of occupied habitat and assessment of general habitat condition were made for each big game species on BLM public lands. These habitats were further segregated into yearlong or seasonal (winter, summer, transitional) categories by state. Estimates of potential habitat on BLM public land were made to anticipate future reintroduction and to determine opportunities for natural expansion. Unoccupied habitat was considered to have potential when the basic habitat components were present or could be provided.

Big game habitat condition was assessed based on available monitoring information and professional judgement. Assessments were made in the context of available food, cover, water, and space arrangement subject to management. Condition classes (excellent, good, fair, poor) were defined as the relative value of existing habitat conditions to potential habitat values obtainable through manipulations or management practices.

Bison

Total occupied habitat: 587,000 acres
 Potential habitat: 329,000 acres
 (Utah, New Mexico)

Number of BLM Resource Area Offices
 managing bison habitat: 3

State	Acres of Seasonal Habitat (000) For Bison				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	300	50	200	—	50
Utah	287	191	34	62	—
Total	587	241	234	62	50

Seasonal Habitats	Habitat Condition Rating (Percent) For Bison				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	—	24	4	6	66
Winter	—	85	15	—	—
Summer	—	—	100	—	—
Transitional	—	100	—	—	—

Black Bear

Total occupied habitat: 66,028,000 acres
 Potential habitat: 929,000 acres
 (all states below)

Number of BLM Resource Area Offices
 managing black bear habitat: 58

State	Acres of Seasonal Habitat (000) For Black Bear				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	56,400	48,400	—	8,000	—
Arizona	218	218	—	—	—
California	355	220	5	130	—
Colorado	2,516	2,146	45	123	202
Idaho	674	613	—	42	19
Montana	533	525	4	2	2
New Mexico	88	79	—	—	9
Nevada	10	10	—	—	—
Oregon	2,186	2,171	1	10	4
Utah	1,573	1,342	—	231	—
Wyoming	1,475	1,451	11	13	—
Total	66,028	57,175	66	8,551	236
Seasonal Habitats	Habitat Condition Rating (Percent) For Black Bear				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	1	35	5	1	58
Winter	—	62	38	—	—
Summer	1	95	3	1	—
Transitional	—	34	57	9	—

Black-Tailed Deer

Total occupied habitat: 3,467,000 acres
 Potential habitat: None

Number of BLM Resource Area Offices
 managing black-tailed deer habitat: 19

State	Acres of Seasonal Habitat (000) For Black-Tailed Deer				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	500	500	—	—	—
California	625	399	131	37	58
Oregon	2,342	1,934	290	118	—
Total	3,467	2,833	421	155	58

Seasonal Habitats	Habitat Condition Rating (Percent) For Black-Tailed Deer				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	3	30	34	7	26
Winter	2	19	33	46	—
Summer	—	38	34	28	—
Transitional	1	18	48	33	—

Caribou and Musk Ox

Total occupied caribou habitat: 33,021,000 acres
 Potential caribou habitat: 2,000 acres
 (Idaho)

Number of BLM Resource Area Offices
 managing caribou habitat: 3

Total occupied musk ox habitat: 250,000 acres
 Potential musk ox habitat: 9,250,000 acres
 (Alaska)

Number of BLM Resource Area Offices
 managing musk ox habitat: 1

State	Acres of Seasonal Habitat (000) For Caribou and Musk Ox in Alaska				
	Total	Yearlong	Winter	Summer	Transitional
Caribou	33,021	22,300	4,269	4,405	2,047
Musk Ox	250	250	—	—	—
Seasonal Habitats	Habitat Condition Rating (Percent) For Caribou ¹				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	36	29	—	—	35
Winter	35	65	—	—	—
Summer	34	32	—	—	34
Transitional	—	56	—	—	44

¹ No habitat condition rating available for musk ox.

Exotic Species

Total occupied
Barbary sheep habitat: 270,000 acres

Number of BLM Resource Area Offices
managing Barbary sheep habitat: 3

Total occupied
Iranian ibex habitat: 62,000 acres

Number of BLM Resource Area Offices
managing Iranian ibex habitat: 1

Total occupied
wild pig habitat: 437,000 acres

Number of BLM Resource Area Offices
managing wild pig habitat: 1

Potential habitat: None

State	Acres of Seasonal Habitat (000) For Exotic Species				
	Total	Yearlong	Winter	Summer	Transitional
New Mexico: Barbary Sheep	270	270	—	—	—
New Mexico: Iranian Ibex	62	62	—	—	—
California: Wild Pig	437	387	10	10	30
Seasonal Habitats	Habitat Condition Rating (Percent) For Exotic Species				
	Excellent	Good	Fair	Poor	Unknown
Yearlong					
Barbary sheep	28	72	—	—	—
Iranian ibex	—	100	—	—	—
Wild pig	—	10	7	8	75
Winter					
Wild pig	—	30	40	30	—
Summer					
Wild pig	—	30	40	30	—
Transitional					
Wild pig	—	33	50	17	—

Grizzly Bear

Total occupied habitat: 66,415,000 acres
 Potential habitat: 146,000 acres
 (all states below)

Number of BLM Resource Area Offices
 managing grizzly bear habitat: 13

State	Acres of Seasonal Habitat (000) For Grizzly Bear				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	66,309	47,309	—	19,000	—
Idaho	24	4	—	11	9
Montana	28	1	3	19	5
Oregon	5	3	—	—	2
Wyoming	49	—	—	—	—
Total	66,415	47,317	3	19,030	16
Seasonal Habitats	Habitat Condition Rating (Percent) For Grizzly Bear				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	16	29	2	—	53
Winter	—	14	86	—	—
Summer	1	42	1	1	55
Transitional	—	38	62	—	—

Javelina

Total occupied habitat: 8,503,000 acres
 Potential habitat: 573,000 acres
 (Arizona, New Mexico)

Number of BLM Resource Area Offices
 managing javelina habitat: 9

State	Acres of Seasonal Habitat (000) For Javelina				
	Total	Yearlong	Winter	Summer	Transitional
Arizona	7,935	7,536	399	—	—
New Mexico	568	568	—	—	—
Total	8,503	8,104	399	—	—

Seasonal Habitats	Habitat Condition Rating (Percent) For Javelina				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	1	18	45	36	—
Winter	—	—	60	40	—
Summer	—	—	—	—	—
Transitional	—	—	52	38	—

Moose

Total occupied habitat: 37,991,000 acres
 Potential habitat: 648,000 acres
 (all states below)

Number of BLM Resource Area Offices
 managing moose habitat: 23

State	Acres of Seasonal Habitat (000) For Moose				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	36,403	36,403	—	—	—
Colorado	10	10	—	—	—
Idaho	255	39	174	34	8
Montana	112	94	4	14	—
Oregon	19	5	6	2	6
Utah	222	—	172	50	—
Wyoming	970	464	259	247	—
Total	37,991	37,015	615	347	14
Seasonal Habitats	Habitat Condition Rating (Percent) For Moose				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	1	38	6	1	54
Winter	7	43	34	16	—
Summer	3	65	29	3	—
Transitional	—	36	21	43	—

Mountain Goat

Total occupied habitat: 1,416,000 acres
 Potential habitat: 56,000 acres
 (Idaho)

Number of BLM Resource Area Offices
 managing mountain goat habitat: 6

State	Acres of Seasonal Habitat (000) For Mountain Goat				
	Total	Yearlong	Winter	Summer	Transitional
Alaska	1,360	1,360	—	—	
Idaho	8	7	—	1	
Montana	31	31	—	—	
Oregon	5	5	—	—	
Wyoming	12	—	2	10	
Total	1,416	1,403	2	11	

Seasonal Habitats	Habitat Condition Rating (Percent) For Mountain Goat				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	98	2	—	—	—
Winter	—	100	—	—	—
Summer	—	100	—	—	—
Transitional	—	—	—	—	—

Mule Deer

Total occupied habitat: 100,091,000 acres
 Potential habitat: 307,000 acres
 (Arizona)

Number of BLM Resource Area Offices
 managing mule deer habitat: 109

State	Acres of Seasonal Habitat (000) For Mule Deer				
	Total	Yearlong	Winter	Summer	Transitional
Arizona	11,507	9,261	1,778	468	—
California	4,261	824	2,317	995	125
Colorado	8,027	999	4,429	1,549	1,050
Idaho	9,524	1,488	2,695	5,168	173
Montana	5,855	4,302	947	596	10
New Mexico	5,995	4,102	239	25	1,629
Nevada	17,261	5,469	5,928	4,922	942
Oregon	7,699	2,173	2,288	3,200	38
Utah	14,531	4,409	8,400	1,683	39
Wyoming	15,431	10,247	3,011	1,773	400
Total	100,091	43,274	32,032	20,379	4,406
Seasonal Habitats	Habitat Condition Rating (Percent) For Mule Deer				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	5	34	35	17	9
Winter	3	32	39	18	8
Summer	6	34	32	18	10
Transitional	1	21	37	36	5

Pronghorn Antelope

Total occupied habitat: 63,351,000 acres
 Potential habitat: 3,711,000 acres
 (Arizona, Colorado,
 New Mexico, Nevada, Utah)

Number of BLM Resource Area Offices
 managing pronghorn habitat: 93

State	Acres of Seasonal Habitat (000) For Pronghorn Antelope				
	Total	Yearlong	Winter	Summer	Transitional
Arizona	1,413	1,413	—	—	—
California	2,034	599	628	797	10
Colorado	1,963	678	1,078	207	—
Idaho	8,251	2,721	1,424	4,101	5
Montana	4,554	2,481	599	1,464	10
New Mexico	3,340	3,271	69	—	—
Nevada	9,954	6,569	582	2,746	57
Oregon	5,216	2,305	625	2,246	40
Utah	8,224	8,093	91	40	—
Wyoming	18,402	8,642	3,635	6,125	—
Total	63,351	36,772	8,731	17,726	122
Seasonal Habitats	Habitat Condition Rating (Percent) For Pronghorn Antelope				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	4	32	29	23	12
Winter	4	27	45	19	5
Summer	8	37	29	15	11
Transitional	—	8	20	39	33

Rocky Mountain Elk

Total occupied habitat: 19,145,000 acres
 Potential habitat: 1,899,000 acres
 (Arizona, Montana,
 Nevada, Oregon, Utah)

Number of BLM Resource Area Offices
 managing Rocky Mountain elk habitat: 80

State	Acres of Seasonal Habitat (000) For Rocky Mountain Elk				
	Total	Yearlong	Winter	Summer	Transitional
Arizona	34	34	—	—	—
Colorado	4,898	437	3,213	998	250
Idaho	2,945	821	881	1,152	91
Montana	1,280	713	340	226	1
New Mexico	911	344	567	—	—
Nevada	573	183	96	272	22
Oregon	1,087	48	513	470	56
Utah	2,805	1,315	1,119	371	—
Wyoming	4,612	1,861	1,711	924	116
Total	19,145	5,756	8,440	4,413	536

Seasonal Habitats	Habitat Condition Rating (Percent) For Rocky Mountain Elk				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	4	51	28	10	7
Winter	6	42	39	13	—
Summer	9	45	29	12	5
Transitional	8	22	52	18	—

Roosevelt Elk

Total occupied habitat: 1,892,000 acres
 Potential habitat: 296,000 acres

Number of BLM Resource Area Offices
 managing Roosevelt elk habitat: 16

State	Acres of Seasonal Habitat (000) For Roosevelt Elk				
	Total	Yearlong	Winter	Summer	Transitional
California	55	55	—	—	—
Oregon	1,837	1,642	113	82	—
Total	1,892	1,697	113	82	—
Seasonal Habitats	Habitat Condition Rating (Percent) For Roosevelt Elk				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	3	20	50	26	1
Winter	—	17	83	—	—
Summer	—	51	49	—	—
Transitional	—	—	—	—	—

Tule Elk

Total occupied habitat: 85,000 acres
 Potential habitat: 22,000 acres
 (California)

Number of BLM Resource Area Offices
 managing tule elk habitat: 2

State	Acres of Seasonal Habitat (000) For Tule Elk				
	Total	Yearlong	Winter	Summer	Transitional
California	85	60	10	5	10
Seasonal Habitats	Habitat Condition Rating (Percent) For Tule Elk				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	—	8	75	17	—
Winter	—	40	40	20	—
Summer	—	66	34	—	—
Transitional	—	40	40	20	—

White-Tailed Deer

Total occupied habitat: 2,298,000 acres
 Potential habitat: 345,000 acres
 (all states below)

Number of BLM Resource Area Offices
 managing white-tailed deer habitat: 32

State	Acres of Seasonal Habitat (000) For White-Tailed Deer				
	Total	Yearlong	Winter	Summer	Transitional
Arizona	769	769	—	—	—
Colorado	11	11	—	—	—
Idaho	233	75	29	120	9
Montana	472	330	37	104	1
New Mexico	150	150	—	—	—
Oregon	161	126	10	15	10
Wyoming	432	266	69	97	—
Total	2,228	1,727	145	336	20
Seasonal Habitats	Habitat Condition Rating (Percent) For White-Tailed Deer				
	Excellent	Good	Fair	Poor	Unknown
Yearlong	5	36	27	13	19
Winter	7	39	43	11	—
Summer	2	46	45	7	—
Transitional	20	30	49	1	—

Appendix B

Listing of Key Habitat Areas by State

Key Habitat Areas were identified through questionnaires, along with the prominent big game species in each habitat area and total acreage of BLM public land. These big game habitat management areas were identified to focus future activity planning and management efforts. Key Habitat Areas were based on habitat components that are essential, physically and/or biologically, to complete life cycle requirements of big game animals, and do not imply any legal status. These areas were considered to be significant because

they are crucial in maintaining or expanding big game populations beyond the yearlong habitat needs found on BLM public lands. Specific objectives and management actions would benefit one or more big game species. In certain circumstances, big game habitat management funds may be expended outside of Key Habitat Areas, but during periods of limited funds, management efforts should be directed to key areas with planned, integrated resource objectives.

Alaska

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
ARCTIC DISTRICT		
Colville River	Moose, Grizzly Bear, Musk Ox	2,000
Teshkepuk	Caribou	900
Utukok	Caribou, Grizzly Bear	7,000
KOBUK DISTRICT		
Central Yukon	Moose, Caribou, Grizzly Bear	9,000
Seward-Noatak & B.V.	Caribou, Grizzly Bear, Moose	15,000
ANCHORAGE DISTRICT		
Haines	Moose, Bk-Tail Deer, Grizzly Bear	900
Kvichuk	Moose, Caribou, Grizzly Bear	800
Upper Kuskoskwim	Moose, Caribou, Bison	2,700
Bonnasilar Anvik	Moose, Caribou, Grizzly Bear	4,100
Nyak	Moose, Grizzly Bear, Caribou	430
Iditarod-George	Moose, Caribou, Black Bear	3,700
Goodnews Bay	Grizzly Bear	300
Total		46,830

Arizona

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
YUMA DISTRICT		
Eagle Mountain	Mule Deer, Javelina	89
Harcuvar Mountain	Mule Deer, Javelina	108
PHOENIX DISTRICT		
Chevelon	R.Mtn.Elk, Pronghorn, Mule Deer	6
Ortega Lake	Pronghorn, Mule Deer	10
Hardscrabble	Pronghorn, Mule Deer	83
Woodruff	Pronghorn, Mule Deer	46
Cordes Junction	Pronghorn, Mule Deer, Javelina	78
Box/Martinez Canyons	Mule Deer, Javelina	8
Gila River Corridor	Mule Deer, Javelina	10
Cerbat Mountains	Mule Deer	90
Hualapai Mountains (NE)	Mule Deer, Javelina, R.Mtn.Elk	100
Goodwin Mesa	Pronghorn, Mule Deer, Javelina	50
Truxton Flat	Pronghorn, Mule Deer, Javelina	22
Hualapai Valley	Pronghorn	300
Hualapai Mountain	R.Mtn.Elk, Mule Deer	28
Empire/Cienega	Pronghorn, Mule Deer, Javelina	50
Brandy Wash	Mule Deer, Javelina	5
Tar Mine Spring	Mule Deer, Javelina	1
Mule Shoe	Wt-Tailed Deer, Black Bear, Javelina	26
San Pedro	Mule Deer, Wt-Tailed Deer, Javelina	56
Mule Mountains	Wt-Tailed Deer	1
Guadalupe	Mule Deer, Wt-Tailed Deer	59
South Fort Thomas	Javelina	11
Sauceda/Sand Tank	Wt-Tailed Deer, Mule Deer, Javelina	150
SAFFORD DISTRICT		
Peloncillo-Whitlock	Mule Deer, Javelina, Pronghorn	420
Black Hills	Mule Deer, Javelina	45
Bowie Mountain	Mule Deer, Wt-Tailed Deer	1

Arizona (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
SAFFORD DISTRICT <i>(continued)</i>		
Oak Creek	Wt-Tailed Deer, Mule Deer	4
Dos Cabezas	Mule Deer, Wt-Tailed Deer	29
Lazy B	Pronghorn	10
North Aravaipa	Mule Deer, Wt-Tailed Deer	44
Santa Teresa/Jackson	Wt-Tailed Deer	16
Upper Deer Creek	Black Bear	7
Jackson Mountain	Mule Deer, Javelina	12
Gila River	Javelina	2
Aravaipa South	Wt-Tailed Deer, Javelina	29
Gila Mountain	Mule Deer, Wt-Tailed Deer, Black Bear	196
Guthrie/Black Hills	Mule Deer, Wt-Tailed Deer, Javelina	106
Turtle Mountains	Mule Deer, Wt-Tailed Deer, Black Bear	46
ARIZONA STRIP DISTRICT		
Black Rock Mountain	Mule Deer	150
Poverty Mountain	Mule Deer	200
Parashant	Mule Deer	300
Hurricane V./Salaratus	Pronghorn	300
Clayhole	Pronghorn	500
Trumbell	Mule Deer	50
Total		3,854

California

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
CALIFORNIA DESERT DISTRICT		
E. Slope White Mtn.	Mule Deer	42
Soldier Pass/Piper Mtn	Mule Deer	48
Cowhorn/Waucoba	Mule Deer	71
Haiwee	Mule Deer	38
Hunter Mtn./ Cottonwood	Mule Deer	54
North Coso Range	Mule Deer	42
E. Slope Inyos	Mule Deer	73
Milpitas Wash/Algod.	Mule Deer	180
McCain Valley	Mule Deer	75
Santa Rosa Mountain	Mule Deer	91
Whitewater Mountain	Mule Deer	46
Chuckwalla	Mule Deer	256
South Coast	Mule Deer	65
East Mojave	Mule Deer	160
UKIAH DISTRICT		
Canahe Ck./Indian V.	Bk-Tailed Deer, Tule Elk	90
Cow Mountain	Bk-Tailed Deer, Wild Pig	50
Horseshoe Ranch	Bk-Tailed Deer	1
King Range	Bk-Tailed Deer, Roosevelt Elk, Black Bear	58
Lacks Creek	Bk-Tailed Deer, Black Bear	5
SUSANVILLE DISTRICT		
Shaffer-Snowstorm	Pronghorn, Mule Deer	400
Big Valley	Mule Deer, Pronghorn	5
Bryant Mountain	Mule Deer	4
Day Bench	Mule Deer	4
Knox Mountain	Mule Deer	3
McDonald Peak	Mule Deer	3
Mount Dome	Mule Deer, Pronghorn	33
Pit River	Mule Deer, Pronghorn	9

California (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
SUSANVILLE DISTRICT <i>(continued)</i>		
Rimrock	Mule Deer	4
Table Lands	Pronghorn, Mule Deer	60
High Rock	Pronghorn, Mule Deer	470
Tuledad	Pronghorn, Mule Deer	140
BAKERSFIELD DISTRICT		
Merced River	Mule Deer	40
West Point	Mule Deer	1
Joaquin Rocks	Mule Deer, Wild Pig	30
Squaw Leap	Mule Deer	5
Laquana Mountain	Mule Deer, Wild Pig	10
Coalinga	Bk-Tailed Deer, Wild Pig	20
Condor Peak	Bk-Tailed Deer, Wild Pig	23
Stockdale Mountain	Bk-Tailed Deer, Wild Pig	3
Seirra de Salinas	Bk-Tailed Deer, Wild Pig	16
Adobe Valley	Pronghorn	30
Hammel Valley	Pronghorn	20
Benton Valley	Pronghorn	10
Bodie Hills	Mule Deer, Pronghorn	120
West Owens Valley	Mule Deer, Tule Elk	25
Round Valley	Mule Deer	18
Casa Diablo-Tablelands	Mule Deer, Pronghorn	30
Slinkard Coleville	Mule Deer	18
Long Valley	Mule Deer	50
Carrizo Plains	Pronghorn, Tule Elk, Wild Pig	3
Blue Ridge	Mule Deer	20
Three Rivers	Mule Deer	20
Total		3,092

Colorado

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
MONTROSE DISTRICT		
Gunnison Basin	Mule Deer, R.Mtn.Elk	148
Uncompahgre Plateau E	Mule Deer, R.Mtn.Elk, Pronghorn	185
South East Montrose	Mule Deer, R.Mtn.Elk	30
Gunnison Gorge	Mule Deer, R.Mtn.Elk	130
North Fork	Mule Deer, R.Mtn.Elk	50
Uncompahgre Plateau W	Mule Deer, R.Mtn.Elk	140
Naturita Ridge	Mule Deer, R.Mtn.Elk	30
Paradox Valley	Mule Deer, R.Mtn.Elk	60
Upper San Miguel/Pl.	Mule Deer, R.Mtn.Elk	25
Pagosa South	R.Mtn.Elk, Mule Deer	25
Durango/Animas V.	R.Mtn.Elk, Mule Deer	50
Dry Creek Basin	R.Mtn.Elk, Mule Deer	150
Disappointment Valley	Mule Deer, R.Mtn.Elk, Pronghorn	200
Monograma Mesa	R.Mtn.Elk, Mule Deer, Pronghorn	125
W. Cortez/Hovenweep	Mule Deer, R.Mtn.Elk	150
Mesa Verde/Mancos	Mule Deer, R.Mtn.Elk	50
GRAND JUNCTION DISTRICT		
Roan Creek	Mule Deer, R.Mtn.Elk	259
Kannah Creek	R.Mtn.Elk, Mule Deer, Pronghorn	62
Grand Valley	Pronghorn	147
Book Cliffs	Mule Deer, R.Mtn.Elk, Black Bear	274
Collbran	R.Mtn.Elk, Mule Deer	81
Ute/Mesa Creek	Mule Deer, R.Mtn.Elk	68
Unaweep	Mule Deer, R.Mtn.Elk	30
Dolores West	Mule Deer, R.Mtn.Elk	33
Bangs-Dominques	Mule Deer, R.Mtn.Elk	132
Glade Park	Mule Deer, R.Mtn.Elk	78
NOSR	Mule Deer, R.Mtn.Elk	79
Battle Mesa	Mule Deer, R.Mtn.Elk	76
Piceance/Hogback	Mule Deer, R.Mtn.Elk	92

Colorado (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
GRAND JUNCTION DISTRICT <i>(continued)</i>		
Storm King-King Mtn.	Mule Deer, R.Mtn.Elk	80
Castle Peak	Mule Deer, R.Mtn.Elk	118
Roaring Fork	Mule Deer, R.Mtn.Elk, Black Bear	57
Hardscrabble	Mule Deer, R.Mtn.Elk, Black Bear	62
CRAIG DISTRICT		
Red Wash/Wolf Creek	Pronghorn, R.Mtn.Elk	60
Oak Ridge	R.Mtn.Elk, Mule Deer	3
Blue Mountain	R.Mtn.Elk, Mule Deer	104
L. Wolf/Crooked Wash	R.Mtn.Elk, Pronghorn, Mule Deer	74
Danforth Hills	R.Mtn.Elk, Mule Deer	38
E. Douglas/Cathedral	R.Mtn.Elk, Mule Deer	75
South Piceance	R.Mtn.Elk, Mule Deer	110
Piceance Triangle	R.Mtn.Elk, Mule Deer	81
Piceance Basin	Mule Deer, R.Mtn.Elk	431
Crooked Wash	Mule Deer, R.Mtn.Elk, Pronghorn	53
White River Dome	Mule Deer, R.Mtn.Elk	45
S. Rim Blue Mountain	Mule Deer, R.Mtn.Elk	50
Spring Creek	Mule Deer, R.Mtn.Elk	51
Scullion/Coal Reef	Mule Deer, R.Mtn.Elk	43
Blue Mountain Ridge	Mule Deer, R.Mtn.Elk	60
Douglas Pass/E. Doug	Mule Deer, R.Mtn.Elk	65
Douglas Basin	Mule Deer, R.Mtn.Elk	176
Cathedral/Big Ridge B	Mule Deer, R.Mtn.Elk	21
Cedar Sp. Draw/Peck M.	R.Mtn.Elk, Mule Deer, Pronghorn	60
Godiva Rim/Bald Mtn.	R.Mtn.Elk	51
L.S. River Corridor	Pronghorn, Mule Deer	42
Fourmile Creek	Pronghorn, Mule Deer	12
Axial Basin	Mule Deer, R.Mtn.Elk	50
Brown's Park	Mule Deer	19

Colorado (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
CRAIG DISTRICT <i>(continued)</i>		
Sandwich Basin	Pronghorn	158
Cold Spring Mtn.	Mule Deer, R.Mtn.Elk	100
Douglas Mountain	R.Mtn.Elk	80
Laramie River	Mule Deer, R.Mtn.Elk, Pronghorn	27
Middle Park	Mule Deer, R.Mtn.Elk, Pronghorn	42
North Park	Pronghorn, R.Mtn.Elk, Mule Deer	47
CANON CITY DISTRICT		
Reinecker Ridge	R.Mtn.Elk, Mule Deer	13
Mtn. Meastas	R.Mtn.Elk, Black Bear, Mule Deer	12
Black Mountain	Mule Deer	19
Queens Reservoir	Mule Deer, Wt-Tailed Deer	5
Shavano/Pass Creek	R.Mtn.Elk, Mule Deer	11
Granite	R.Mtn.Elk, Mule Deer	9
Trickle Mountain	R.Mtn.Elk, Pronghorn, Mule Deer	20
Los Mogotes	Mule Deer, R.Mtn.Elk, Pronghorn	33
Total		5,626

Idaho

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
BOISE DISTRICT		
Jacks Creek	Pronghorn, Mule Deer	150
Castle Creek	Mule Deer, Pronghorn	20
Deep-Battle Creek	Pronghorn, Mule Deer	360
Bennett Mtn.	Mule Deer, Pronghorn, R.Mtn.Elk	116
South Jarbidge	Mule Deer, Pronghorn	898
Saylor Creek	Mule Deer, Pronghorn	230
Squaw Butte	R.Mtn.Elk, Mule Deer	100
Snake River Breaks	R.Mtn.Elk, Mule Deer	150
Cascade-Prong	Pronghorn	10
Cascade-Deer	Wt-Tailed Deer	20
Juniper Mountain	Mule Deer	64
Highway 95	Pronghorn	7
West Rabbit	Pronghorn	3
Shares Basin	Pronghorn	7
BURLEY DISTRICT		
Curlew	R.Mtn.Elk, Mule Deer	139
Pleasant View Mt.	Mule Deer, R.Mtn.Elk	50
Samaria Mountain	Mule Deer	21
Big Onion/Dairy Ck.	R.Mtn.Elk, Mule Deer	17
Deep Creek Mtn.	Mule Deer, R.Mtn.Elk	70
South Hills/Goose C.	Mule Deer	49
Jim Sage/Raft River	Mule Deep, Pronghorn	50
North Side	Pronghorn	110
Shoshone Basin	Pronghorn	88
IDAHO FALLS DISTRICT		
Little Lost-Birch Ck.	Pronghorn, R.Mtn.Elk, Mule Deer	398
Big-Lost	Pronghorn, R.Mtn.Elk	199
Big Desert	Pronghorn, Mule Deer	580
Oneida Narrows	Mule Deer, R.Mtn.Elk	5
Schmidt Ridge	Mule Deer, R.Mtn.Elk, Moose	4

Idaho (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
IDAHO FALLS DISTRICT <i>(continued)</i>		
Fish Raven	Mule Deer, R.Mtn.Elk	5
Soda Hills	Mule Deer, R.Mtn.Elk, Moose	15
Stump Creek	Mule Deer, R.Mtn.Elk	3
Bear Lake Plateau	Mule Deer	15
Downy Front	Mule Deer	5
King Creek	Mule Deer	6
Tex Creek	R.Mtn.Elk, Mule Deer, Moose	12
Crooked Creek	Pronghorn, Mule Deer	38
Cedar/Table Buttes	Pronghorn, R.Mtn.Elk	70
Sands	R.Mtn.Elk	209
S.F. Snake River	Moose, Wt-Tailed Deer	15
Eddie/Middle	Pronghorn, R.Mtn.Elk, Moose	25
SALMON DISTRICT		
Lemhi/Salmon	Mule Deer, R.Mtn.Elk, Pronghorn	300
Leadore South	Pronghorn, R.Mtn.Elk, Mule Deer	70
SHOSHONE DISTRICT		
Picabo Hills	Mule Deer, R.Mtn.Elk, Pronghorn	73
Wild Horse Allotment	Mule Deer, Pronghorn	250
Beaver ACEC	R.Mtn.Elk	7
Elk Mtn. ACEC	R.Mtn.Elk	8
Bennett Hills	R.Mtn.Elk	310
Johnson Hills	R.Mtn.Elk, Mule Deer, Pronghorn	100
COEUR D'ALENE DISTRICT		
Pine Point-Pine Ck.	R.Mtn.Elk, Wt-Tailed Deer, Mule Deer	2
Two-Tailed Peak	R.Mtn.Elk, Wt-Tailed Deer, Grizzly Bear	2
Placer Ck.	R.Mtn.Elk, Mule Deer, Wt-Tailed Deer	2
Kellogg High School	R.Mtn.Elk, Wt-Tailed Deer, Mule Deer	1

Idaho (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
COEUR D'ALENE DISTRICT <i>(continued)</i>		
Alhambra-Sunshine	Mule Deer, R.Mtn.Elk, Moose	2
Prospect Gulch	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	1
Blue Eagle	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	4
Slaughterhouse Knob	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	1
Rochat	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	35
St. Joe River	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	4
Craig Mountain	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	10
Lolo Creek	R.Mtn.Elk, Wt-Tailed Deer	8
Elk City	R.Mtn. Elk, Moose, Wt-Tailed Deer	12
Salmon River	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	45
Total		5,580

Montana

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
LEWISTON DISTRICT		
Missouri R. Valley	R.Mtn.Elk, Mule Deer, Pronghorn	46
North Creek	Mule Deer, Pronghorn	60
Missouri River Breaks	Mule Deer, Wt-Tailed Deer, Pronghorn	170
North Blaine County	Pronghorn, Mule Deer, Wt-Tailed Deer	92
Frenchman Creek	Mule Deer, Pronghorn, Wt-Tailed Deer	100
Cottonwood Creek	Mule Deer, Pronghorn	250
Saco Hills	Mule Deer, Pronghorn	40
Larb Hills	Mule Deer, R.Mtn.Elk	80
Missouri R. (Phil)	Mule Deer, R.Mtn.Elk, Pronghorn	200
Little Rocky Mtns.	Mule Deer	20
White Rock Coulee	Mule Deer, Pronghorn	70
Big Stage	Pronghorn	90
Missouri Breaks (J)	R.Mtn.Elk, Mule Deer	410
Little Belt Mtn.	R.Mtn.Elk, Mule Deer	9
Devil's Kitchen	Mule Deer, R.Mtn.Elk, Wt-Tailed Deer	14
Rocky Mtn. E. Front	Mule Deer, R.Mtn.Elk	19
Marias River	Wt-Tailed Deer, Mule Deer, Pronghorn	19
Sweet Grass Hills	R.Mtn.Elk, Mule Deer, Wt-Tailed Deer	7
BUTTE DISTRICT		
Rocky Mountain (15)	R.Mtn.Elk	80
Rocky Mountain (6)	R.Mtn.Elk	13
Rocky Mountain (22)	Mule Deer	221
Rocky Mountain Range	Pronghorn	104
S. Centennial Mtn.	R.Mtn.Elk, Mule Deer, Wt-Tailed Deer	45
Ram Mountain	R.Mtn.Elk, Mule Deer	7

Montana (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
BUTTE DISTRICT <i>(continued)</i>		
Marcum Mountain	R.Mtn.Elk, Mule Deer	8
Elevation Mountain	R.Mtn.Elk, Mule Deer, Moose	45
Hoodoo Mountains	R.Mtn.Elk, Mule Deer	30
S.Elkhorns/Limestone	Mule Deer, R.Mtn.Elk	55
Stands Basin	R.Mtn.Elk, Mule Deer	480
Humbug Spires	R.Mtn.Elk, Moose	11
Northwest Pioneers	R.Mtn.Elk, Mule Deer	200
MILES CITY DISTRICT		
Missouri River Breaks	Mule Deer, R.Mtn.Elk, Pronghorn	200
Dogie Butte	Mule Deer, Pronghorn	8
Two River Breaks	Mule Deer, Wt-Tailed Deer, Pronghorn	45
Owl Creek Breaks	Mule Deer, Pronghorn, Wt-Tailed Deer	15
Northern Butte County	Mule Deer, Pronghorn	120
Indian Creek Breaks	Mule Deer, Pronghorn, Wt-Tailed Deer	15
Cedar Canyon	Mule Deer, Wt-Tailed Deer, Pronghorn	6
Pryor Mountains	Mule Deer	29
Bear Tooth Mountains	R.Mtn.Elk, Mule Deer	3
Roundup	Pronghorn, Mule Deer, Pronghorn	80
Lone Tree	Pronghorn	70
Total		3,586

New Mexico

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
ROSWELL DISTRICT		
E. Guadalupe Escarpment	Mule Deer, Barbary Sheep, Pronghorn	160
Querecho Pl./Caprock	Pronghorn, Mule Deer	70
Penasco R./Elk Canyon	Mule Deer, Pronghorn, Barbary Sheep	35
Gypsum Hills-XT Draw	Mule Deer, Barbary Sheep	180
Pecos R./Burton Flat	Mule Deer	20
ALBUQUERQUE DISTRICT		
San Antonio/Pot Mtn.	Mule Deer, R.Mtn.Elk, Pronghorn	96
Copper Hill Ridge	Mule Deer, R.Mtn.Elk	16
Chama/Cebolla	R.Mtn.Elk, Mule Deer	72
Sabinosa	Mule Deer, R.Mtn.Elk, Barbary Sheep	32
Arroyo Co./Cerro Verde	Pronghorn	124
Cebollita Canyon	Mule Deer, R.Mtn.Elk	7
Elk Springs ACEC	Mule Deer, R.Mtn.Elk	10
Ignacio Chavey Grant	Mule Deer, R.Mtn.Elk	11
Rosa/Carracas Mesa	Mule Deer, R.Mtn.Elk	30
LAS CRUCES DISTRICT		
Hatchet/Alamo Heuco	Mule Deer, Javelina	184
Florida Mountains	Iranian Ibex, Mule Deer	62
Gila Lower Box	Javelina, Mule Deer	3
Organ Mountains	Mule Deer	68
Cedar Mountains	Mule Deer, Pronghorn, Javelina	187
Columbus	Pronghorn	67
Las Uvas Mountains	Mule Deer	84
Nutt	Pronghorn, Mule Deer	228
Robedo Mountains	Mule Deer, Pronghorn	149
West Potrillos Mtn.	Mule Deer	109
Peloncillo Mtn.	Mule Deer, Wt-Tailed Deer, Javelina	170
San Simon Cienega	Javelina, Mule Deer	1

New Mexico (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
LAS CRUCES DISTRICT <i>(continued)</i>		
Nogal	Pronghorn, Mule Deer	134
Chupadera	Mule Deer, R.Mtn.Elk, Pronghorn	121
Jornado North	Pronghorn, Mule Deer	167
Boxquecito	Mule Deer	141
Magdalena	Mule Deer, Pronghorn	16
San Augustine	Mule Deer, Pronghorn, R.Mtn.Elk	128
Fence Lake	Mule Deer, Pronghorn	66
Quemado	Mule Deer, Pronghorn	324
Horse Mountain	Mule Deer, R.Mtn.Elk	6
Ladrones Mountain	Mule Deer	142
Pelona Mountain	Mule Deer, R.Mtn.Elk, Pronghorn	92
Bent/Sacramento Mtn.	R.Mtn.Elk, Mule Deer	7
Otero Mesa	Pronghorn	400
Cornucopia Hills	Mule Deer	192
Brokeoff Mountains	Mule Deer	60
North McGregor Range	Mule Deer	50
Jornada del Muerto	Pronghorn	418
San Andres Mountains	Mule Deer	24
Caballo Mountains	Mule Deer	100
Rio Grande Bajada	Pronghorn	35
Total		4,798

Nevada

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
ELKO DISTRICT		
Metropolis	Mule Deer, Pronghorn	322
Pilot/Crittenden	Mule Deer, R.Mtn.Elk	154
Goose Creek	Mule Deer	140
Oneil/Salmo Falls	Mule Deer, Pronghorn	749
Marys River	Mule Deer, Pronghorn, R.Mtn.Elk	293
Cherry Creek	Mule Deer, Pronghorn	208
Ruby/Wood Hills	Mule Deer, Pronghorn	118
Spruce/Goshutes	Mule Deer, R.Mtn.Elk, Pronghorn	988
Elko #1	Pronghorn	53
Elko #2	Pronghorn	48
Elko #3	Pronghorn	59
Elko R.A.	Mule Deer	339
Elko #4	Mule Deer	349
Elko #5	Mule Deer	45
WINNEMUCCA DISTRICT		
Warm Springs	Pronghorn, Mule Deer	74
Dolly Vardin Basin	Pronghorn	43
Buffalo Hills	Pronghorn	107
Selenite Range	Mule Deer	9
Granite Range	Mule Deer	66
Poodle Mountain	Mule Deer	68
Mahogany Creek	Mule Deer	24
Pine Forest	Mule Deer, Pronghorn	636
Montana-Double H	Mule Deer, Pronghorn	488
Little Owyhee/Snowst	Mule Deer, Pronghorn	1,024
Black Rock	Mule Deer, Pronghorn	288
Jackson Mountain	Mule Deer, Pronghorn	790
Santa Rosas	Mule Deer, Pronghorn	387
Rye Patch	Mule Deer, Pronghorn	79
Kelly Creek	Mule Deer, Pronghorn	4

Nevada (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
WINNEMUCCA DISTRICT		
Billy Creek Mtn.	Mule Deer, Pronghorn	439
BATTLE MOUNTAIN DISTRICT		
Battle-Buffalo	Mule Deer	150
Shoshone	Mule Deer	373
Simpson Park	Mule Deer, Pronghorn	285
Desatoya	Mule Deer	150
Callaghan	Mule Deer	262
Gilbert-Manhattan	Mule Deer	82
Mount Airy	Mule Deer	10
North Toiyabe	Mule Deer	92
Monitor Valley	Pronghorn, Mule Deer, R.Mtn.Elk	230
Roberts-Koben	Pronghorn, Mule Deer	182
Sulfur Spgs-Whistler	Mule Deer	91
Fish Creek-Eureka	Mule Deer	86
Bates Mtn.-Grass V.	Pronghorn	155
Antelope Valley	Pronghorn	123
Diamond	Pronghorn, Mule Deer	100
Hunts Canyon	R.Mtn.Elk	20
Sylvania Mountain	Mule Deer	150
Hot Ck./Kawich Mtns.	Mule Deer	340
Paradise Mtns.	Mule Deer, Pronghorn	30
Trail Canyon	Mule Deer	21
Carvers Bench	Mule Deer	25
Big Smokey Valley	Pronghorn	460
Sand Springs Valley	Pronghorn	100
Stone Cabin Valley	Pronghorn	250
Lone Valley	Pronghorn	380
Riaload Valley	Pronghorn	540
Ralston/ Monitor V.	Pronghorn	480
Hot Ck./Revelle	Pronghorn	380

Nevada (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
LAS VEGAS DISTRICT		
Beaver Dam	Mule Deer	600
Dry Lake-Deloar V.	Pronghorn	213
ELY DISTRICT		
Antelope Range	Mule Deer, Pronghorn, R.Mtn.Elk	545
Schell Creek	Mule Deer, R.Mtn.Elk	756
Mountain Wilson	Mule Deer, Pronghorn, R.Mtn.Elk	967
East Schell Bench	Mule Deer, Pronghorn, R.Mtn.Elk	46
Brown Knoll/Rock C.	Mule Deer, R.Mtn.Elk	18
Buck/Bald Mountains	Mule Deer	82
Timberline	Mule Deer, R.Mtn.Elk	28
CARSON CITY DISTRICT		
Excelsior	Mule Deer	28
Fletcher	Pronghorn	22
Hackett Canyon	Mule Deer	9
Wade Valley	Mule Deer	3
S/E Pine Nuts	Mule Deer	23
Churchill Canyon	Pronghorn	36
Pine Nut Summer	Mule Deer	46
Buckeye	Mule Deer	12
Sunrise	Pronghorn	15
Pah Rah	Mule Deer, Pronghorn	38
Lassen-Washoe	Mule Deer	66
Desatoya	Mule Deer	18
Stillwater Mtns.	Mule Deer	215
Virginia	Mule Deer	14
Clan Alpine Mtns.	Mule Deer	32
Total		17,770

Oregon

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
ROSEBURG DISTRICT		
Tyes-Hubbard Lost Ck.	Roosevelt Elk, Bk-Tailed Deer, Black Bear	95
Columbian	Wt-tailed Deer, Bk-Tailed Deer	6
North Umpqua	Roosevelt Elk, Black Bear, Bk-Tailed Deer	79
LAKEVIEW DISTRICT		
Pokegema	R.Mtn.Elk, Bk-Tailed Deer	9
Gerber	R.Mtn.Elk, Mule Deer, Pronghorn	101
Windy-Harpold Ridge	Mule Deer	6
Swan Lake Rim	R.Mtn.Elk, Mule Deer	10
South Warner	Mule Deer, Pronghorn	250
Albert Rim-Colvin Timb.	Mule Deer, Pronghorn	200
Diablo Mtn.-Sheep Rock	Pronghorn	200
Ft. Rock-Silver Lake	Mule Deer, R.Mtn.Elk	400
Juniper-Horsehead	Mule Deer, Pronghorn	450
Beatty Butte	Mule Deer, Pronghorn	400
BURNS DISTRICT		
Drewsey-Stonewater	Mule Deer, Pronghorn, R.Mtn.Elk	180
North Steens	Mule Deer, Pronghorn, R.Mtn.Elk	75
Burns-Riley	Mule Deer, Pronghorn, R.Mtn.Elk	150
Trout Creek Mtn.	Mule Deer, Pronghorn	100
Pueblo Mountain	Mule Deer, Pronghorn	219
Steens Mountain	Mule Deer, Pronghorn, R.Mtn.Elk	490
MEDFORD DISTRICT		
Grants Pass	Black Bear, Bk-Tailed Deer, Roosevelt Elk	149
W. Applegate-III.	Black Bear, Bk-Tailed Deer, Roosevelt Elk	100
Little Applegate	Bk-Tailed Deer, Black Bear	6
Agate Flat/Jenny Ck.	Bk-Tailed Deer, Roosevelt Elk	12
Grizzle Peak	Roosevelt Elk	2
Lake Creek	Bk-Tailed Deer	5

Oregon (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
MEDFORD DISTRICT <i>(continued)</i>		
Butte Falls	Roosevelt Elk, Bk-Tailed Deer, Black Bear	60
Evans Creak	Roosevelt Elk, Bk-Tailed Deer, Black Bear	30
Mule Creek	Roosevelt Elk, Bk-Tailed Deer, Black Bear	13
Elk Valley/Gold Mtn.	Roos. Elk, Bk-Tailed Deer, Black Bear	12
Upper Cow Creek	Roos. Elk, Bk-Tailed Deer, Black Bear	8
Walker Slide Creek	Roosevelt Elk, Bk-Tailed Deer, Black Bear	16
Glendale/Azalea	Roosevelt Elk, Bk-Tailed Deer, Black Bear	8
VALE DISTRICT		
Keating	Mule Deer, Pronghorn, R.Mtn.Elk	30
Big Lookout Mtn.	Mule Deer, Pronghorn, R.Mtn.Elk	32
Sumpter	Mule Deer, Pronghorn, R.Mtn.Elk	27
Vines Hill	Mule Deer, Pronghorn	15
Alkali Flat	Mule Deer, Pronghorn	25
Whitehorse	Mule Deer, Pronghorn	200
Jackies Butte	Mule Deer, Pronghorn	31
PRINEVILLE DISTRICT		
North Paulina	Mule Deer, Pronghorn	40
Prineville Res/Creek	Mule Deer	20
Metoluis	Mule Deer	10
La Pine	Mule Deer, R.Mtn.Elk	43
Sutton Mountain	Mule Deer, R.Mtn.Elk	60
S.F. John Day River	Mule Deer, R.Mtn.Elk	35
Rudis Mountain	R.Mtn.Elk, Mule Deer	46
Johnson Height	Mule Deer, R.Mtn.Elk	25
Rhodes Canyon	Mule Deer	11
Muddy Creek	Mule Deer, R.Mtn.Elk	26

Oregon (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
PRINEVILLE DISTRICT <i>(continued)</i>		
Black Rock/Pine Hollow	Mule Deer	32
Lower John Day	Mule Deer	23
G.I.	Pronghorn	31
Twelve Mile Ck. & Table	Pronghorn	21
Glass Butte	Mule Deer	21
Ibex/Buck Creek	Mule Deer	40
S.F. Crooked River	Mule Deer	49
Hampton	R.Mtn.Elk, Mule Deer	14
Davis Creek	R.Mtn.Elk, Mule Deer	10
N.F. Crooked R./S.B.	Mule Deer, R.Mtn.Elk	49
Bronco Ck./Treichel R.	Mule Deer, R.Mtn.Elk	14
SPOKANE DISTRICT		
Okanogan	Mule Deer, Wt-Tailed Deer	4
Rock Creek	Mule Deer	4
Moses Cowles	Mule Deer	12
Methow	Mule Deer	3
Chopaka	Mtn. Goat	5
Flagstaff Mtn.	Mule Deer, Wt-Tailed Deer	1
Channeled Scrablands	Mule Deer	15
EUGENE DISTRICT		
S. Valley W-Suslaw	Roosevelt Elk, Black Bear	20
Willamette Valley	Bk-Tailed Deer, Black Bear	10
South Valley East	Roosevelt Elk, Black Bear, Bk-Tailed Deer	24
SALEM DISTRICT		
Salem	Roosevelt Elk, Bk-Tailed Deer, Black Bear	318

Oregon (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
COOS BAY DISTRICT		
Tioga	Black Bear, Roosevelt Elk, Bt-Tailed Deer	101
Myrtlewood	Black Bear, Roosevelt Elk, Bk-Tailed Deer	106
Dean Creek	Roosevelt Elk	1
Total		5,445

Utah

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
CEDAR CITY DISTRICT		
Parowan Front	Mule Deer, R.Mtn.Elk	28
Bumblebee	Mule Deer	7
New Castle	Mule Deer	15
Sevier	Mule Deer, R.Mtn.Elk	18
Beaver Front	Mule Deer, R.Mtn.Elk	29
New Harmony	Mule Deer, R.Mtn.Elk	4
Minerals	Mule Deer	7
Fremont	R.Mtn.Elk, Mule Deer	4
Woolsey	Mule Deer	6
Indian Peak/Pine V.	R.Mtn.Elk, Mule Deer, Pronghorn	200
Herd Unit #58	Mule Deer	69
Herd Unit #61-A	Mule Deer	23
Herd Unit #61-B	Mule Deer	110
Herd Unit #61-C	Mule Deer	194
Herd Unit #19	Mule Deer	30
Antimosy	Mule Deer, R.Mtn.Elk, Pronghorn	46
Buckskin	Mule Deer	11
Zion Park-Sandhills	Mule Deer	48
Panguitch #1	Mule Deer, Pronghorn	8
Panguitch #2	R.Mtn.Elk, Mule Deer, Pronghorn	2
East Clark Bench	Pronghorn	32
Panguitch Valley	Pronghorn, Mule Deer, R.Mtn.Elk	44
Panguitch SW	R.Mtn.Elk, Mule Deer, Pronghorn	6
Sheep Ck.-Willis Ck.	R.Mtn.Elk	2
SALT LAKE DISTRICT		
Crawford Mountains	Mule Deer, Pronghorn, R.Mtn.Elk	24
Aspen Springs	Moose, Mule Deer	30
Dog Hollow	Mule Deer, Pronghorn, R.Mtn.Elk	3
Pilot Mtn.- Patt.	R.Mtn.Elk	4
Raft River-Bovine	Mule Deer	21

Utah (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
SALT LAKE DISTRICT <i>(continued)</i>		
Puddle Valley	Pronghorn	205
Rush Valley	Pronghorn	140
Stansbury/Onaqui Mt.	Mule Deer, Pronghorn	125
Deep Creek Mtn.	Mule Deer, Pronghorn	77
Cedar Mountain	Mule Deer, Pronghorn	370
Oquirrh Mountain	Mule Deer, R.Mtn.Elk	45
Simpson/Sheeprock M.	Mule Deer, Pronghorn	121
Tintic Mountains	Mule Deer	33
Gold Hill	Pronghorn, Mule Deer	220
MOAB DISTRICT		
Cisco Desert	Pronghorn, Mule Deer	250
Potash-Confluence	Mule Deer, R.Mtn.Elk	500
Hatch Point	Pronghorn, Mule Deer	150
Dolores	Mule Deer, R.Mtn.Elk	100
La Sal Mountains	Mule Deer, R.Mtn.Elk	100
San Rafael Desert	Pronghorn	538
Icelander	Mule Deer, R.Mtn.Elk	43
Manti Foothills	Mule Deer, R.Mtn.Elk	120
Price Canyon	Mule Deer, R.Mtn.Elk, Moose	46
West Tavaputs	Mule Deer, R.Mtn.Elk, Moose	140
Gordon Creek	Mule Deer, R.Mtn.Elk, Moose	392
Cedar Mountain	R.Mtn.Elk, Mule Deer	46
Grassy Trail	Pronghorn	551
Hatch Point	Mule Deer, Pronghorn	150
Beef Basin	Mule Deer	175
Montezuma Creek	Mule Deer	161
RICHFIELD DISTRICT		
Parker Mountains	Pronghorn, Mule Deer, R.Mtn.Elk	214
Henry Mountains	Bison, Mule Deer, Pronghorn	300
Little Rocks/D.Dev.	Mule Deer, Pronghorn	363

Utah (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
RICHFIELD DISTRICT <i>(continued)</i>		
Antelope V. Mtn. Home	Pronghorn, Mule Deer, R.Mtn.Elks	113
Conger	Pronghorn, Mule Deer	159
WahWah-Tule	Pronghorn, Mule Deer, R.Mtn.Elks	220
Cricket	Pronghorn, Mule Deer	126
Amasa	Mule Deer	20
Fountain Green	Mule Deer	7
South Sanpitch	Mule Deer	58
Mayfield/Salina FR.	Mule Deer, R.Mtn.Elks	24
Gypsum Sanfledge	Mule Deer, R.Mtn.Elks, Pronghorn	27
Plateau/Bear V/N. C.	Mule Deer, R.Mtn.Elks	11
Fishlake/Cedar Cove	Mule Deer, R.Mtn.Elks, Pronghorn	33
Grass Valley	Mule Deer, R.Mtn.Elks, Pronghorn	67
Kingston Canyon	Mule Deer, R.Mtn.Elks	32
Durkee Spgs./Elkow R.	R.Mtn.Elks	22
Deer Peak	Mule Deer, R.Mtn.Elks	42
Maysvale/Circleville F.	Mule Deer	27
Glenwood/Monroe/ Elkrow	Mule Deer	67
Sheeprocks #13	Mule Deer	119
Tintic Mountains #14	Mule Deer	188
S. Nebo Mountains #42	Mule Deer	23
N. Oaks Creek Mtn. #53	Mule Deer	5
Valley Mtns. #54	Mule Deer	4
Swasey Mtns. #62B	Mule Deer	143
Deep CK/Fish Sprg. #62A	Mule Deer	112
Nebo Elk #11	R.Mtn.Elks	10
VERNAL DISTRICT		
Brown's Park	Mule Deer, R.Mtn.Elks	102
Book Cliff's Cons. Area	Mule Deer, R.Mtn.Elks, Black Bear	319
Total		8,780

Wyoming

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
WORLAND DISTRICT		
Absaroka Front	R.Mtn.Elk	214
Bighorn R./GreyBull R.	Mule Deer, Wt-Tailed Deer	8
Basin Floor	Pronghorn, Mule Deer	900
West Slope	R.Mtn.Elk, Mule Deer, Pronghorn	530
Nowater	Pronghorn, Mule Deer	383
Big Horn River	Mule Deer, Wt-Tailed Deer	2
Sand Creek	Pronghorn, Mule Deer	122
W. Bighorn Mtns.	R.Mtn.Elk, Mule Deer	161
Carter Mt.-Absaroka	R.Mtn.Elk, Mule Deer	141
RAWLINS DISTRICT		
Red Desert	Pronghorn, R.Mtn.Elk	164
Ferris/Seminole	R.Mtn.Elk, Mule Deer, Pronghorn	106
Shirley Mountains	R.Mtn.Elk, Mule Deer, Pronghorn	180
Sage Creek Basin	Pronghorn, Mule Deer	10
South Desert	Pronghorn, Mule Deer	100
Saratoga Valley	R.Mtn.Elk, Mule Deer, Pronghorn	141
Laramie Peak	R.Mtn.Elk, Mule Deer, Pronghorn	58
Jelm Mountain	Mule Deer, Pronghorn, R.Mtn.Elk	20
Lander RA #1	Pronghorn	420
Lander RA #2	Mule Deer	210
Lander RA #3	R.Mtn.Elk, Black Bear	105
Lander RA #4	Moose	28
ROCK SPRINGS DISTRICT		
Prospect Mountains	R.Mtn.Elk, Pronghorn, Mule Deer	355
Hickey Mtn./Ceder MT	R.Mtn.Elk, Mule Deer, Pronghorn	93
West Red Desert	Pronghorn	591
Tri-State	R.Mtn.Elk, Mule Deer, Pronghorn	282
Winter Range	Mule Deer, Pronghorn, R.Mtn.Elk	300
Big Piney-LaBarge	Mule Deer, Pronghorn, R.Mtn.Elk	175
Mesa	Mule Deer, Pronghorn	50

Wyoming (continued)

Key Habitat Areas by District	Major Big Game Species	Public Land Acreage (000)
ROCK SPRINGS DISTRICT <i>(continued)</i>		
Bench Corral	R.Mtn.Elk, Pronghorn, Mule Deer	50
Deadline-Graphite	R.Mtn.Elk, Pronghorn, Mule Deer	17
Miller Mountain	R.Mtn.Elk, Mule Deer, Pronghorn	20
CASPER DISTRICT		
Buffalo Ck.-Badwater	R.Mtn.Elk, Mule Deer, Pronghorn	220
South Bighorns	R.Mtn.Elk, Mule Deer, Pronghorn	140
Powder River Breaks	R.Mtn.Elk, Mule Deer, Pronghorn	600
New Castle	Pronghorn, Mule Deer	291
Total		7,187

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